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PELAGIC DRIFTNET FISHERIES

HEARING

BEFORE THE

NATIONAL OCEAN POLICY STUDY

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON

PELAGIC DRIFTNET FISHERIES ISSUES

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PELAGIC DRIFTNET FISHERIES

WEDNESDAY, OCTOBER 9, 1985

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
NATIONAL OCEAN STUDY POLICY,
Washington, DC.

The subcommittee met, pursuant to notice at 10:17 a.m., in room SR-253, Russell Senate Office Building, Hon. Ted Stevens presiding.

Staff members assigned to this hearing: Bob Eisenbud, staff counsel; and James Drewry, minority staff counsel

OPENING STATEMENT BY SENATOR STEVENS

Senator STEVENS. We will now turn to our hearing which is scheduled for this morning on the pelagic driftnet issue. I am informed that statements have been filed with the committee by Taiwanese and by the Japanese.

There is some interest in both countries. Those have been reproduced and are available, as I understand it, to anyone who wishes to see them this morning, and we welcome them. We will print them in the record at the appropriate place in the record.

There is a growing concern in Alaska and, I believe, in other parts of the Nation about the impact of the high seas driftnet fisheries of the Pacific Rim nations. These driftnets have had a tremendous impact in our judgment on the fish stocks of our area, such as salmon, and on marine mammals and also sea birds.

The netting that is used in making these driftnets is not readily biodegradable. If they are lost or discarded or jettisoned, the nets continue to ghost fish, and we believe that salmon valued in the millions of dollars are lost to all fishermen, foreign and domestic alike, and even more importantly they are lost to the reproduction process by virtue of these ghost nets.

In addition, high seas driftnets are inefficient as a gear in the judgment of our officials. It has been estimated that one fish is lost for every salmon that is taken in that fishery. By that I mean, when they take those salmon, they are severely decreasing the future net reproduction of our salmon fishery. They are immature and we feel that we are losing a great many fish because of the fact that these driftnets are cut loose or are accidentally lost in the operation of the high seas driftnet fishery.

Now, our Government and Japan are involved in a bilateral negotiation designed to try to eliminate the interceptions of U.S.-origin salmon by Japanese high seas driftnet fleets, but so far we have been unable to achieve any agreement in this area because of the unwillingness of the Japanese to accept measures to reduce the interceptions.

In our judgment, it would be in the interest of both nations that the problem be handled by negotiations. We are holding this hearing to establish a record of the extent of the driftnet problem and to make that record available for all concerned, to demonstrate the coalition of U.S. citizenry who oppose the high seas fisheries that use driftnets. If we are unable to obtain a resolution of the problem through negotiation, I am certain that others will join with me to use this record for the basis of appropriate action by Congress to try to deal with the problem.

We have a situation where Japan, Taiwan, and Korea use approximately 1,700 vessels, each of which sets a 9 to 20-mile-long gill net every evening while they are fishing, for a staggering total of more than 1 million miles of netting that is in the North Pacific every year. I will put the balance of my statement in the record so that my colleague can make his opening statement, but it is clear that the indiscriminate use of this high seas netting process is not related at all to sound fisheries management, and in our judgment cannot continue to be allowed if the North Pacific stocks are to survive.

I would yield to my good friend at this point if you have a statement.

OPENING STATEMENT BY SENATOR GORTON

Senator GORTON. Thank you, Mr. Chairman.

I think it most important and appropriate that the committee is holding this oversight hearing concerning itself with problems created by pelagic driftnets. I will also have two of my own constituents from Seattle who will be testifying here this morning, Bob Morgan, president of Pacific Seafood Processors Association, and Alan Reichman of Greenpeace Northwest, as well as Tim Wapato from one of our Indian tribes who are equally concerned with this threat.

This statement is going to focus on two issues, the high seas interception of salmon and the net entanglement of marine mammals and sea birds. The driftnet harvesting of salmon and steelhead of the U.S. origin by Japanese high seas mothership and land based fleets is inconsistent with the purposes, policy, and provisions of the Magnuson Fishery Conservation and Management Act.

The Magnuson Act establishes our country's exclusive management authority over all anadromous species of U.S. origin. Research indicates that between 200,000 and 700,000 Alaska Chinook salmon are being intercepted each year by the Japanese high seas salmon fleet.

I find this situation intolerable, particularly since the high seas harvest generally consists of small, immature fish. In addition, high seas salmon fishing is contrary to the principles of rational salmon management. Salmon are harvested close to the shore. Fisheries managers can distinguish between individual salmon stocks and ensure that each stock is harvested at an optimum level. When the salmon are harvested on the high seas, it is impossible to harvest stocks selectively and to protect those stocks which may be depleted.

Our signing of the Pacific Salmon Treaty with Canada combined with the other conservation arrangements in the Northwest, make it imperative that the high seas interception of salmon be eliminated as soon as possible. It does not make sense to expend time and money on our salmon and steelhead resources only to have them intercepted by a high seas pelagic driftnet fishery.

The net entanglement of marine mammals and sea birds is an associated problem of great magnitude in the North Pacific Ocean. There is a continued need for reliable data in order to determine the impact of pelagic driftnets on marine animals, not only in areas where high seas salmon fishing is taking place, but in those areas where pelagic driftnets are being used to catch squid, marlin, and tuna.

An estimated 500,000 sea birds and 5,500 porpoises are killed each year as a result of the salmon high seas fishery. What is even more disconcerting is that little is known about the incidental take of marine mammals by the much larger squid fleets in the North Pacific Ocean. I hope that this hearing will provide incentives to find a resolution to the problems created by pelagic driftnets. I look forward to hearing this testimony.

Thank you, Mr. Chairman.

[The statement follows:]

Opening Statement by Senator Hollings

Mr. Chairman, you and I share a longstanding commitment to managing and conserving our marine resources. Thus, I am not surprised that you have taken the initiative in examining the issue of pelagic driftnets. I recently learned that during the fishing season in the North Pacific, over 20,000 miles of driftnets may be set each evening. That length of netting would stretch from our hearing room to my home in Charleston about thirty-five times. In light of this enormous effort, it is not difficult to believe scientific estimates that these fisheries unintentionally kill many thousands of seabirds and marine mammals each year.

In 1985, we appropriated $1 million to study the effects of net entanglement on populations of marine mammals, seabirds, and fish. The study has made a good start and we expect it to continue next year. I understand that driftnets are a significant part of this entanglement problem. The nets are routinely broken, lost, or abandoned and continue to "ghost fish" long after the fishermen have returned to port.

Mr. Chairman, we all agree that methods used to harvest our natural resources should minimize environmental damage. Although pelagic driftnets are effective, serious questions remain about their efficiency. I welcome the insight into the issue provided by the testimony of the governments of Japan, Taiwan, and Korea. Because the problem is beyond the scope of domestic regulation, there is a need for a cooperative international effort to develop effective fishery management plans for the high seas. I look forward to today's testimony to assess the situation and to make recommendations for mitigation.

Senator Stevens. Our first witnesses will appear in a panel, the Honorable Ed Wolfe, Deputy Assistant Secretary for Oceans and Fisheries Affairs, the Department of State, Mr. William Gordon, Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, and Mr. Ron Lambertson, Associate Director for Wildlife Resources, U.S. Fish and Wildlife Service, Department of the Interior.

Gentlemen. Ed, you are first. I do not know if you have decided who would make the first statement. Whatever you would like.

STATEMENTS OF EDWARD WOLFE, DEPUTY ASSISTANT SECRETARY FOR OCEANS AND FISHERIES AFFAIRS, DEPARTMENT OF STATE; WILLIAM GORDON, ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE; AND RON LAMBERTSON, ASSOCIATE DIRECTOR FOR WILDLIFE RESOURCES, FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

Mr. WOLFE. Mr. Chairman, Senator Gorton, I am happy to be here today to discuss this very important issue. If the chairman and the policy study agree, I will submit my full statement for the record, as it is rather lengthy, and summarize my remarks in five minutes or less. I would be more than happy to respond to any questions which I am sure you will have after my presentation.

Senator STEVENS. That is very good. We will print all your statements in full in the record, and be pleased if you would just summarize.

Mr. WOLFE. Thank you. Today I will focus on three specific areas: the high-seas driftnet fisheries: the high-seas interception of North American salmon by foreign nations; and very briefly the role of the International North Pacific Fishery Commission in managing these fisheries.

In addition, I will briefly discuss our efforts through international organizations regarding the incidental take of marine mammals and sea birds.

At the outset, Mr. Chairman, let me say that the State Department views the high-seas drift gillnet fishing as wasteful and is concerned about its impact on U.S. resources, specifically salmon. This has been reflected in our most recent discussions with the Government of Japan on the Japanese interception of U.S.-origin salmon on the high seas. I will address this later during my testimony.

Our primary role in negotiations on North Pacific and Bering Sea driftnet fisheries is to represent U.S. interests in reducing the interception of unacceptably high levels of North American salmon on the high seas. As the committee is aware, Taiwan fishing operations have been a major concern. As you are aware, Senator Stevens, you recently met with Secretary Shultz on this issue and he continues to be very concerned about the issue.

In the last few years, Taiwan has had an unregulated squid gillnet fishery in the North Pacific Ocean. With the assistance of concerned congressional staff, we urged Taiwan to control its squid fleet, and in 1984 Taiwan informed us that they had promulgated regulations. These regulations prohibited both fishing for salmon on the high seas and exporting salmon products from Taiwan.

However, there were still reports of their squid vessels taking high levels of salmon. Because of these recurring problems, we again requested Taiwan to take stronger measures. I was just informed about 5 minutes ago that one of my staff was handed regulations from the Taiwanese regarding this very issue.

I did not have time to go over these regulations but I will certainly provide them to your staff, and we can review them together. We initially saw the draft regulations that Taiwan provided, and were tentatively satisfied, but we will be very interested to look at the final version in detail.

If appropriate regulations are adopted by Taiwan and are adequately enforced, and of course that is one of the key issues, we feel that the majority of North American salmon stocks will be protected from incidental interception by the Taiwan squid gillnet fleet.

Japan, the major factor in U.S.-origin salmon interceptions, has approximately 520 squid gillnet vessels operating in the North Pacific. Since 1981, Japan's squid gillnet fleet has been regulated by time and area closures that protect most of the North American salmon stocks. Unfortunately, we still receive reports that the Japanese squid gillnet fleet has violated the boundaries established to separate the squid fleet from salmon stocks. More severe penalties and increased surveillance may be necessary if we are to discourage the squid vessels from incidentally taking U.S.-origin salmon.

A more visible and troublesome fishery is one that you made reference to in your opening statement—the Japanese mothership and land-based salmon fishery in the North Pacific and Bering Sea. Unlike the squid fisheries I previously mentioned which incidentally intercept salmon, these fleets concentrate their fishing directly on salmon stocks. I might add that Japan is the only nation with a high-seas fishery that targets on salmon. These land-based and mothership fisheries are regulated by the INPFC, as well as under a Japanese-Soviet Fisheries Agreement, and occur in both the U.S. EEZ and in international waters.

Although the majority of fish caught by the Japanese salmon fisheries in the North Pacific are of Soviet origin, it is estimated that they still catch about 1 million North American salmon per year. Because the INPFC in our opinion has been unable to reduce the rate of salmon interceptions, as I mentioned earlier, we are pursuing bilateral discussions with the Government of Japan. I will tell you very candidly and very openly that we have had two sessions, and in my opinion there has been very little progress toward negotiating the phase-out of the Japanese mothership and land-based fisheries from areas where they intercept North American salmon.

Nonetheless, we will meet again within the next 4 or 5 days. I will be leaving after this hearing en route to Tokyo to continue the bilateral discussions on this very important issue. The Department of State and the Department of Commerce are convinced that the bilateral, diplomatic approach is the most effective method at this point in time to resolve the issue.

We are considering various ways to induce Japan to negotiate in good faith on this matter. I have already informed the Japanese that failure to make progress on this issue will affect our overall United States-Japan fisheries relationship, and more specifically, their 1986 fishery allocations.

Throughout my testimony I have referred to the INPFC. This is the organization that was established to regulate the North Pacific salmon fishery and ensure the conservation of North American stocks. The Department of State renegotiated the INPFC in 1977 to further restrict the high-seas salmon fishery. In fact, one of my predecessors, the current Assistant Secretary for Oceans and International Environmental and Scientific Affairs, Ambassador Negroponte, renegotiated this protocol.

Although significant numbers of North American salmon are still taken by the Japanese, it must be recognized that the INPFC has served to protect the majority of U.S. and Canadian salmon stocks. If the Japanese were not regulated by INPFC, they could return to fishing for salmon closer to our EEZ and the salmon interception rate, in our opinion, would increase, possibly up to numbers as high as 20 million.

If I could, Mr. Chairman, I would like to turn briefly to the problem of the incidental take of marine mammals and seabirds. The type of net used in the drift gillnet fishery is known to trap many animals other than fish. Studies by U.S. scientists indicate the Japanese mothership and land-based salmon fleets are killing several hundred thousand sea birds annually. There is also incidental take of marine mammals, although the levels are not as dramatic as with seabirds.

Marine mammals taken in the U.S. zone by the Japanese fleet are monitored under a memorandum of understanding between the United States and Japan. U.S. observers are onboard Japanese vessels to record incidental take. As I have mentioned in my full statement for the record, there are other international organizations that are also involved in this issue—the Food and Agriculture Organization being one. In addition, the U.S. introduced a resolution which was adopted at the September meeting of the parties to the London Dumping Convention, which called for action by the FAO and the International Maritime Organization on the problem of lost and discarded plastics, including fish nets.

Mr. Chairman, let me say in closing that we intend to continue addressing the pelagic driftnet issue through both the international and the bilateral fora. We all agree this is a major problem. We have talked about it before and I am sure we will be talking about it in the future. As I said, I am leaving shortly to continue discussions with Japan in Tokyo and will give you a full report once we return.

Thank you, gentlemen.

[The statement follows:]

Statement of Edward E. Wolfe, Deputy Assistant Secretary for Oceans and Fisheries Affairs, Department of State

Mr. Chairman, Members of the National Ocean Policy Study and Members of the Committee. I am Edward E. Wolfe, Deputy Assistant Secretary of State for Oceans and Fisheries Affairs. Thank you for inviting me to testify on the pelagic driftnet fisheries of the North Pacific Ocean, an issue with which the State Department has long been concerned. As you know, the international aspects of this issue are complex and require that the executive and legislative branches of government continue working together to solve them.

My testimony today will focus on 3 specific areas: the high-seas driftnet fisheries; the high-seas interception of North American salmon by foreign nations; and the role of the International North Pacific Fisheries Commission [INPFC] in managing these fisheries. In addition, I will briefly discuss our efforts through international organizations regarding the incidental take of marine mammals and sea birds.

The Sate Department views high-seas drift gillnet fishing as wasteful and is concerned about its impact on U.S. resources, especially salmon. This has been reflected most recently during the United States/Japan discussions on the Japanese interception of United States-origin salmon on the high seas. I will address this issue in more detail later during my testimony.

Our primary role in negotiations on North Pacific and Bering Sea driftnet fisheries is to represent U.S. interests in reducing the interception of unacceptably high levels of North American salmon on the high seas. Although the Department is responsible for negotiation with the foreign governments involved, we seek and utilize technical and policy advice from the Department of Commerce [NMFS], state fishery agencies, Congress and the fishing industry.

As the Committee is aware, Taiwan fishing operations have been a major concern. In the last few years Taiwan has had an unregulated squid gillnet fishery in the North Pacific Ocean. Approximately 130 Taiwan vessels were involved in 1983 and 1984 with an estimated annual harvest of several thousand tons of salmon as bycatch. With the assistance of concerned congressional staff, we urged Taiwan to control its squid fleet, andi 1984 Taiwan informed us that they had promulgated regulations. These regulations prohibited both fishing for salmon on the high seas and exporting salmon products from Taiwan. Still, reports of squid vessels taking high levels of salmon persisted, as did reports of Taiwan salmon products being marketed in other countries.

Because of these recurring problems, we again requested Taiwan to take stronger measures. U.S. fisheries interests conveyed their message through the American Institute in Taiwan [AIT] to the Coordinating Council for North American Affairs [CCNAA] on this issue. This summer, we were informed that Taiwan will adopt domestic regulations which will limit interceptions of North American salmon by time and area closures. We are encouraged by the draft regulations, which are similar to the regulations presently implemented by Japan to regulate their high-seas squid gillnet fishery. However, U.S. interests are waiting to review the final Taiwan regulations to determine whether North American salmon stocks can be protected. If appropriate regulatons are adopted by Taiwan and are adequately enforced, we feel the majority of North American salmon stocks will be protected from incidental interception by the Taiwan squid gillnet fleet.

Another country that fishes for squid is the Republic of Korea which has approximately 100 squid gillnet vessels operating in the North Pacific Ocean. Although the fishery is unrestricted, we have no reports of Korean interception of North American salmon. In addition, there are also no reports of Korean-caught salmon being internationally marketed.

Japan, the major factor in United States foreign salmon interceptions, has approximately 520 squid gillnet vessels operating in the North Pacific Ocean. Since 1981, Japan's squid gillnet fleet has been regulated by time and area closures that protect most of the North American salmon stocks. Unfortunately, we still receive reports that the Japanese squid gillnet fleet has violated the boundaries established to separate the squid fleet from salmon stocks. Although the U.S. Government reports these violations to the Government of Japan, and many times penalties are imposed, it is regretable that reports of violations still continue. Incidental salmon catch appears to be low; however, more severe penalties and increased surveillance may be necessary if we are to discourage their squid vessels from incidentally taking United States-origin salmon.

A more visible and troublesome fishery in the North Pacific and Berring Sea is the Japanese mothership and landbased salmon fishery. Unlike the squid fisheries which incidentally intercept salmon, these fleets concentrate their fishing directly on salmon stocks. Japan is the only nation with a high-seas fishery that targets on salmon.

Japan's salmon gillnet fleet indiscriminately takes immature fish of mixed stocks from various rivers and nations. It also produces an estimated salmon mortality of 30 to 50 percent due to dropouts in the gillnets. There are 4 motherships and 172 catcher boats in the Japanese mothership salmon fishery. In addition, the landbased salmon fishery has about 210 drift gillnet vessels. These land-based and mothership fisheries are regulated by the INPFC, as well as under a Japanese-Soviet fisheries agreement, and occur in both the U.S. Exclusive Economic Zone [EEZ] and in international waters. Although the majority of fish caught by the Japanese salmon fisheries in the North Pacific are of Soviet origin, it is estimated they still catch about 1 million North American salmon each year.

Because the INPFC has been unable to reduce the rate of salmon interceptions, as I mentioned earlier, we are pursuing bilateral discussions with Japan. Although we have had two sessions since June, thus far there has been little progress toward negotiating a phaseout of the Japanese mothership and land-based fisheries from areas where they intercept North American salmon. Nonetheless, we will meet again in Tokyo on October 14 and 15. We are convinced that the bilateral approach is the most effective method to alleviate the problem, but we have the difficult task of convincing the Japanese to eliminate or to even phase down their important international salmon fishery. The State Department is considering various ways to induce Japan to negotiate in good faith on this matter. I have already informed the Japanese that failure to make progress on this issue will affect the overall U.S.-Japan fishery relationship, and more specifically, their 1986 fishery allocations.

The organization established to regulate the North Pacific salmon fishery and ensure the conservation of North American salmon stocks is the International North Pacific Fisheries Commission [INPFC]. The Department of State renegotiated the INPFC in 1977, which became effective in 1978, to further restrict the high seas salmon fishery. Prior to renegotiation, the Japanese fleets were allowed to operate in the entire area of international waters west of 175 degrees West and intercepted considerably large quantities of North American salmon. The current treaty moves this line 10 degrees west.

Although significant numbers of North American salmon are still taken by the Japanese, it must be recognized that INPFC has served to protect the majority of the U.S. and Canadian salmon stocks. INPFC has also served a valuable role as a scientific collection and exchange body, and our knowledge of salmon and other high-seas stocks has been greatly increased. If the Japanese were not regulated by INPFC, they could return to fishing for salmon closer to our EEZ and the salmon interception rate of North American-origin salmon would increase.

Since Taiwan and the Republic of Korea are not members of INPFC, their squid gillnet fisheries are not directly affected by the Commission. However, at the 1984 annual meeting, INPFC recommended that each member country take or continue to take action to eliminate the harvest of salmon on the high seas by non-INPFC nations.

I would now like to turn to the problem of the incidental take of marine mammals and seabirds. The type of net used in the drift gillnet fishing method is known to trap many animals other than fish. Studied by United States scientists indicate the Japanese mothership and landbased salmon fleets are killing several hundred thousand seabirds annually. There is also incidental take of marine mammals, although the levels are not as dramatic as with seabirds. In recent years, Japan has taken 3,000 to 4,000 Dall's porpoises annually in its salmon mothership gillnet operations. There is a limit under the permitting requirements of the Marine Mammal Protection Act set at 5,500 porpoises in the United States EEZ, and the Japanese have not exceeded that amount. Marine mammals taken in the United States zone by the Japanese fleet are monitored under a memorandum of understanding between the United States and Japan. United States observers are on board Japanese vessels to record incidental take. Other types of mammals are also caught in these nets, although Dall's porpoises are the most prevalent.

The INPFC has focused attention on the problem of entanglement of marine mammals through research and data collection on incidental catch levels. However, the Commission has taken the position that the seabird problem does not fall within its purview.

Other international organizations are also looking into the entanglement problem. The Food and Agricultural Organization [FAO] has begun a study of the problem, asking member countries to provide information on the scope of the problem and to begin discussion of preventive or remedial methods. The United States took the lead in developing and discussing an agenda item on this issue at the April 1985 FAO Committee on Fisheries meeting held in Rome. In addition, the U.S. introduced a resolution which was adopted at the September meeting of the Parties to the London Dumping Convention, which called for action by the FAO and the International Maritime Organization on the problem of lost and discarded plastics, including fish nets.

To summarize, the Department intends to continue to address the pelagic driftnet fisheries problem through both international and bilateral fora. All of us agree this is a major problem and we appreciate the opportunity you have provided to focus attention on it.

Senator Stevens. Well, Mr. Wolfe, we certainly wish you God speed in that mission, and we will get back to you in a few minutes with some other questions. I think it would be better if we proceed with Mr. Gordon and Mr. Lambertson first, and then we could have some questions to the panel.

Mr. Gordon.

Mr. **Gordon**. Thank you, Mr. Chairman, Senator Gorton. The issues as we see them are essentially three. The interception of U.S.-origin salmon in the directed salmon fishery; the interception of U.S.-origin salmon in the squid fisheries; and the incidental take of living marine resources by the driftnet gear tended, lost, or abandoned, or by discarded marine debris.

The Magnuson Act, the Fur Seal Act, and the North Pacific Fisheries Act each contain some authority to enforce their provisions in international waters. That is, beyond our exclusive economic zone. The driftnet fisheries have been a matter of concern in the United States since Japan initiated the salmon driftnet fishery in the early 1950's, and as Mr. Wolfe has pointed out, the INPFC was established in 1953 to regulate that fishery and was modified later to provide additional protection to the U.S.-origin salmon.

As he has pointed out, we will continue talk to them in a bilateral mode to try to come to grips with this, but despite the existence of regulations, obviously the catch continues, and this is particularly true with the Japanese squid fishery, where severe enforcement problems have occurred with this fleet.

In addition, the Taiwan squid fishery is also a major concern, both in terms of regulation and enforcement. A number of Taiwanese squid vessels have harvested significant amounts of salmon in the past several years, and have developed a salmon export business. Major action on this issue was taken recently following extensive discussions with U.S. officials, and Taiwan has announced that it will adopt regulations for squid fisheries similar to those adopted by Japan.

Information on incidental take is very sketchy. The National Marine Fisheries Service deployed observers aboard the U.S. Coast Guard Cutter *Storis* for 36 days in August and September to sample the squid driftnet fisheries of Japan, Taiwan, Korea, and the extent of their operations, and the catch of species other than squid.

We have a summary on that which I will give you shortly, but from the salmon mother ship data, we see a significant incidental take of Dall's porpoise and sea birds. We, like State, believe that the salmon gill net fishery in the North Pacific is wasteful and represents a serious loss to U.S. salmon fishermen. It should be phased out as quickly as possible from the areas in which U.S.-origin salmon may be intercepted.

The other driftnet fisheries for squid, marlin, and other warm water species do not appear to infringe on the salmon resources as long as existing regulations are strictly enforced, but they do, as we see it, impinge on the well being of a number of species not sought specifically in that gear.

I should point out that both at the First World Conference on Fisheries last year and again this spring at the Committee on Fisheries in the FAO, the United States delegation put forth papers dealing with this issue. In the Committee on Fisheries there was unanimous agreement by the world bodies in fisheries that it was a serious issue all over the world, and it had to be dealt with, and that the FAO should begin to accumulate information, so that the world order may bring into focus what this problem is and develop ways of dealing with it.

Turning to the *Storis* trip, we in the National Marine Fisheries Services, in cooperation with the Coast Guard, just finished 36 days of research on the high seas squid gill net fisheries of Japan, the Republic of Korea, and Taiwan in the Central North Pacific. The Coast Guard provided the *Storis* as a research platform, and we provided the scientific party.

The directive of our research was to examine the gillnetters and determine if they incidentally catch marine mammals, sea birds, and salmon. Since so little is known about these fisheries, we wanted information on the vessels, the fishing techniques, equipment, and schedules in addition to catch information.

Unfortunately, the Tawianese and the Koreans were fishing too far away, so we had to concentrate on the Japanese vessels, and although we had planned to conduct a survey throughout the squid regulation area, a search and rescue event in rough weather kept us from accomplishing that objective. But the U.S. Coast Guard personnel boarded 15 gill netters, and our scientists observed 4 deployments and 11 retrievals of gill nets.

It took 3 to 4 hours to deploy a net, and from 6 to 9 hours to retrieve it. Different size boats fish different lengths of gill net ranging from 7 nautical miles to 35 nautical miles of set net each evening. The retrieval usually started 3 or 4 hours before sunrise and continued into the morning. It was difficult to observe the catch before sunrise, but good data was obtained during daylight hours, especially when using a small boat to get close to the net. Both boarding and retrieval information show that there were no or at least very few salmon caught. No marine mammals were caught, but more observation is needed before definite conclusions are possible on either the salmon catch or the marine mammal catch.

The gill nets caught a few sea birds, but at a lesser rate than others, such as the salmon gill net fisheries. In this particular endeavor, 27 sea birds were observed entrapped in 53.4 nautical miles of gill net.

Nine pieces of abandoned gill net were found, mostly badly tangled and not fishing. This work yielded a survey of 2,356 nautical miles and a sighting rate of discarded netting of 3.4 nets per 1,000 nautical miles surveyed, so there is a significant loss rate. Four tuna, three blue sharks, one sunfish, one pomfret, and a few unidentified fish and one fur seal were found dead in the nets. The biggest piece of net was 270 feet long, but most pieces averaged 150 feet long, so we have obviously got a very small sample in that area, but it begins to put some things together on what this problem is.

That, Senator, concludes my comments. I would be pleased if you wish to show you this vast area and some of the enforcement areas that were involved with on this chart we have available.

[The statement follows:]

STATEMENT OF WILLIAM G. GORDON, ASSISTANT ADMINISTRATOR FOR FISHERIES, NOAA, DEPARTMENT OF COMMERCE

Mr. Chairman and members of the National Ocean Policy Study and the Committee, I am William G. Gordon, Assistant Administrator for Fisheries for the National Oceanic and Atmospheric Administration [NOAA]. Thank you for inviting me to testify on the foreign North Pacific driftnet fisheries. This hearing is timely in view of the imminent meeting of the International North Pacific Fisheries Commission [INPFC]. I hope we can reach common understanding on the issues involved in these fisheries.

The issues as I see them are essentially three:

Interception of U.S.-origin salmon in the directed salmon fisheries.

Interception of U.S.-origin salmon in the squid fisheries, and

Incidental take of living marine resources by driftnet gear, tended, lost or abandoned, or discarded marine debris.

While the focus of this hearing is on activities outside the accepted 200-mile limits of coastal state resource jurisdiction, these activities affect, or are alleged to affect, resources over which the United States exercises management authority under U.S. law and treaty obligations. These include the Magnuson Act, by which the United States asserted management authority over anadromous species of U.S. origin outside national economic zones; the Marine Mammal Protection Act; the Endangered Species Act; the Fur Seal Act; and the North Pacific Fisheries Act. The latter implements the International Convention for the High Seas Fisheries of the North Pacific Ocean and provides for U.S. participation in the International North Pacific Fisheries Commission. The Magnuson Act, the Fur Seal Act and the North Pacific Fisheries Act each contain some authority to enforce their provisions in international waters, that is, beyond our exclusive zone [EEZ].

The high seas drift gillnet fisheries of the North Pacific Ocean have been a matter of concern to the United States since Japan initiated a salmon driftnet fishery in the early 1950's. INPFC was established in 1953 to regulate this fishery and ensure the protection of North American salmon stocks, and the INPFC Protocol was renegotiated in 1977 to further restrict the fishery's activities. In the early 1980's, mainly as a result of the loss of traditional fishing grounds within other countries' 200-mile zones, several East Asian countries initiated new or expanded driftnet fisheries for squid, tuna, marlin, and other species on the high seas. The United States expressed concern about these fisheries and succeeded in obtaining agreement from Japan and Taiwan to restrict their squid fisheries to areas in which salmon are unlikely to be harvested incidentally. Nonetheless, concerns remain over the level of interceptions of U.S.-origin salmon by Japan's salmon fisheries, enforcement problems in the squid fisheries, the incidental capture of marine mammals, seabirds and other living marine resources, and problems associated with marine debris and gear loss in all these large driftnet operations.

DESCRIPTION OF THE MAJOR FISHERIES

There are two Japanese salmon driftnet fisheries. The Japanese mothership salmon fishery consists of 4 motherships and 172 catcher boats operating driftnets in the Bering Sea and North Pacific Ocean in both international waters and the U.S. EEZ. The Japanese land-based salmon fishery consists of approximately 210 driftnet vessels. Both fisheries operate west of 175°E; the land-based fishery is also restricted to south of 46°N.

Japan's salmon fisheries operate under the terms of the INPFC Protocol and under a Japanese-Soviet salmon agreement. The INPFC sets eastern boundaries and time and effort restrictions, while the Japanese-Soviet agreement sets total salmon catch quotas and restricts the Japanese fisheries from the Soviet zone and sections of international waters. The Japanese also pay Soviet fees (approximately $18 million in 1985) because the majority of the salmon they catch is of Soviet origin.

The Japanese squid fishery consists of approximately 520 vessels operating in the North Pacific south of the Aleutian chain. Due to pressure from the United States over possible salmon interceptions, Japan limited the squid fleet's northern progress and eastern boundary in 1981. Water temperatures preferred by squid (15° to 22°C) differ from those preferred by samon and steelhead (1° to 15°C), and the northern fishery boundary is selected monthly to correspond to these water temperature preferences. U.S. scientists have stated that if the squid fleet stays within these constraints, the incidental harvest of salmon should be insignificant.

The Japanese billfish fishery consists of approximately 600 vessels operating throughout the Pacific Ocean, with target species being billfish and tuna. Since

1982, operations in the North Pacific have been subject to the same regulatory constraints as the Japanese squid fishery.

The Taiwanese squid fishery consists of approximately 130 vessels which have operated without area restrictions in a fairly broad range of the North Pacific: 10,000–20,000 metric tons of salmon were taken in 1983–84. Under new regulations adopted in August, 1985, following discussions with U.S. governmental and Congressional interests, the fishery will be restricted similarly to the Japanese fishery.

The South Korean squid fishery consists of approximately 100 vessels operating in the North Pacific. The Koreans have advised us that they follow restrictions similar to those placed on the Japanese fleet. We are not aware of reports of significant interceptions of salmon in this fishery.

SALMON INTERCEPTIONS IN JAPAN'S HIGH SEAS SALMON FISHERIES

The INPFC was established in 1953 to protect North American salmon from interception by Japan's high seas salmon fisheries by banning salmon fishing east of 175°W. While this provided some protection for U.S. salmon stocks, interception levels remained unacceptably high, particularly for Bristol Bay sockeye salmon, and the United States, following the adoption of the Magnuson Act, withdrew from the INPFC in 1977. As a result, the INPFC Protocol was renegotiated the following year and Japan's salmon fisheries were restricted from large areas of the high seas.

At that time many in the United States believed that, although additional restrictions on the salmon fisheries should be sought, U.S. salmon stocks were, on the whole, receiving adequate protection. Scientific studies since that time, however, indicate that interceptions of U.S.-origin salmon, particularly of valuable chinook salmon, are in fact much higher than previously believed. Our best estimates are that the Japanese salmon fisheries in recent years have harvested around one million U.S.-origin salmon per year.

Although the U.S. Section to the INPFC has called for Japan to take action to reduce and eliminate these interceptions, no significant action has occurred in the INPFC forum. Instead, the only additional restriction to Japan's salmon fisheries since the 1978 renegotiation of the INPFC Protocol took place after industry-to-industry talks. As a result of these discussions, Japan voluntarily agreed to restrict its chinook harvest by the mothership fishery. Because Japan has refused to consider further restrictions through the INPFC, the United States initiated bilateral negotiations on this issue in 1985. We support a strong U.S. position at these talks, which are scheduled to resume October 14–15 in Tokyo.

With regard to enforcement problems in the Japanese salmon fisheries, Article IX of the INPFC Protocol provides for the member countries to submit information on violations of the Convention. Since 1979, Japan has reported annually on the number and type of violations its vessels have committed during previous salmon season and the penalties imposed thereon. Although the United States reported several massive violations of the regulations by Japanese land-based vessels in the 1970's, there have apparently been relatively fewer violations in recent years. From 1981–84, Japan has reported between 3–11 violations per year with penalties imposed of between 30–90 days suspension of fishing privileges the following season for those vessels found fishing in prohibited areas.

SALMON INTERCEPTIONS IN THE DRIFTNET FISHERIES FOR SQUID AND OTHER SPECIES

Large-scale driftnet fisheries for squid and other species in the North Pacific Ocean were initiated by Japan, South Korea, and Taiwan in the early 1980's, mainly as result of the loss of access to other countries' 200-mile zones. The United States expressed concern over these fisheries because of the possibility that they could intercept salmon either incidentally or as part of directed operations. As noted above, Japan adopted regulations in 1981 designed to restrict the squid fishery during specific months from those areas in which salmon are likely to be present. Through the INPFC, the United States has also gained more information on Japan's driftnet fisheries for squid, marlin and other species. Japan now submits annual reports to the INPFC on its driftnet fisheries as well as statistics on the incidental catch of other species in this fishery.

Despite the existence of regulations for the Japanese squid fisheries, severe enforcement problems have occurred with this fleet. From 1983–85 the Coast Guard has sighted numerous Japanese vessels fishing north of the boundaries established by Japanese regulations. Following U.S. requests to take action against the violators, the Fisheries Agency of Japan stated in 1984 that it had ordered a ten-day stay in port during the fishing season for those vessels found in violation of the regulations. It also reported that, apparently due to higher than normal water temperatures, there was no incidental salmon catch by these vessels. We continue to ask that they do so and Japanese officials indicate that action may be taken.

The Taiwan squid fishery is also a major concern, both in terms of regulation and in enforcement. A number of Taiwan squid vessels have harvested significant amounts of salmon the past several years and have developed a salmon export business. The United States brought this issue to international attention and in 1983 Japan, Taiwan's major market for the salmon, adopted regulations banning the import of salmon from Taiwan. U.S. customs officers were also alerted to the possible sale of Taiwan harvest salmon to this country and investigations are continuing into other possible attempts by Taiwan fishermen to export salmon through third countries, such as the Netherlands, Canada, South Korea, and Singapore. The Taiwan salmon issue was also raised in the INPFC, which in 1984 passed a resolution calling for the member countries to take or continue to take action to prevent the harvest of salmon on the high seas by non-INPFC members.

Major action on this issue was taken recently when, following extensive discussion with U.S. officials, Taiwan announced in August 1985 that it would adopt regulations for its squid fishery similar to those adopted by Japan. Nonetheless, some Taiwan fishermen may be tempted to continue the lucrative practice of harvesting salmon and exporting it illegally. The United States should continue efforts to prevent the export of Taiwan-harvested salmon as well as surveillance/enforcement efforts to ensure that all Taiwanese vessels observe the squid fishery's newly-adopted boundaries.

Discussions with Japan and Taiwan on salmon interceptions in the squid fisheries should continue. Although the South Korean squid fishery has apparently not intercepted significant quantities of salmon, Korean regulations similar to those in effect for Japan and Taiwan might be useful. Further talks may also be possible. U.S. GIFAs with Japan, Taiwan, and South Korea call for "the development of further cooperation in the field of fisheries of mutual concern, including the establishment of appropriate multilateral organizations for the collection and analysis of scientific data respecting such fisheries." In a related area, the United States has attempted to involve other North Pacific fishing nations in the INPFC's non-anadromous activities, as called for in Article IV of the INPFC Protocol. An enlarged INPFC of this nature might provide a forum for raising issues such as the activities of the squid fisheries.

In the field of surveillance and enforcement, efforts should be made to improve monitoring of the activities of all the squid fisheries. We have been working with the Coast Guard in this respect, and in 1985 the NMFS initiated an observation program for these squid fleets. It may also be possible to increase observation efforts in the North Pacific through bilateral agreements with other countries or through the INPFC.

INCIDENTAL TAKE OF OTHER ANIMALS BY DRIFTNET GEAR

Information on incidental take is very sketchy. The best data are from the Japanese mothership salmon fishery conducted in the U.S. EEZ. The United States has placed observers in the salmon mothership fleet since 1978. One observer has also been deployed to the Japanese squid driftnet fishery by industry-to-industry agreement. NMFS has not made any official requests of Japan, Korea or Taiwan to accommodate U.S. observers aboard their squid driftnet vessels. This summer NMFS deployed observers aboard the U.S. Coast Guard cutter *Storis* to monitor the squid driftnet vessels of Japan, Taiwan and Korea to determine the extent of their operations and their catch of species other than squid. Only small numbers of seabirds were captured in the squid fishery.

From the salmon mothership data, the largest incidental takes are of Dall's porpoise and seabirds. The incidental capture of other fish species consists mainly of pollock and octopus. Dall's porpoise is also reported to be taken in the land-based salmon fishery and the squid fishery. At this time, the total take of Dall's porpoise is not believed to be significant.

Other species of small cetaceans and other marine mamals incidentally taken outside U.S. jurisdiction are not reported by the Japanese. Other species of porpoise native to warmer waters are probably encountered in the squid fishery, but we do not have sufficient observations to estimate the incidental take. If the mothership fishery is any guide, other mammals are rare. Since 1982, observers report the take of only a few fur seals (4–8 animals per year) in cold weather areas. We would not expect fur seals to be in any greater jeopardy in the other fisheries. Nor do we see a problem with the Hawaiian monk seal, an endangered species. These animals probably stay within our EEZ and are not encountered by the squid fishery occurring outside the zone. Lost or abandoned nets and netting could still be a problem, but as with fur seals, entanglement appears mainly to involve webbing other than that used for driftnets.

I believe only one monk seal/drift net entanglement has been observed. The monofilament gillnets tend to ball up when they are damaged. However gillnet debris is a serious problem for vessel operation since it can foul propellers or rudders. There are reports from fishermen that the Japanese squid driftnet fishery catches a significant amount of albacore. This catch is said to be very small fish which may be discarded. This represents a potential loss of resources, especially to the developing U.S. albacore fishery. However, the evidence is anecdotal and is insufficient to assess the impact on the albacore populations and the U.S. catch. Likewise, a fisherman reported several leather back turtles entangled in driftnets in 1982. Leather backs are listed as endangered.

We have observations on the incidential take of seabirds, but defer to the Department of the Interior to interpret them.

IN SUMMARY

We believe salmon driftnet fishing in the North Pacific is wasteful and represents a serious loss to U.S. salmon fishermen. It should be phased out expeditiously from areas in which U.S.-origin salmon may be intercepted. The other driftnet fisheries, for squid, marlin and other warmwater species, do not appear to infringe on salmon resources as long as existing regulations are strictly enforced.

This concludes my testimony. I am ready to answer any questions you may have.

Senator **Stevens**. Why don't you do that just for a minute, just to be sure that we are all oriented, Bill?

Mr. **Gordon**. On this chart, and there are handouts that will give you more detail, we have sketched in roughly the 200 mile zone, including the delineation with the Soviet Union and the so-called doughnut hole area in the Aleutian Basin which is beyond the 200 miles of our country. The areas in light green depict the INPFC fishing area. The dark green to the west is the agreed upon management regime for the Taiwanese fishery, and the Japanese fishery, which is restricted to jigging only for squid in this green area.

This vast red area in the Central Pacific encompassing part of the Hawaiian Archipelago in the State of Hawaii is the principal area where the squid gill net operations are undertaken. In an effort to reduce the potential for taking salmon, the Japanese have agreed that this area to the north, and I have folded it down, is closed for a good portion of the year because the temperatures could be ideal for the distribution of salmon in this area. Generally it is recognized that salmon would not be found in waters greater than 15 degrees centigrade.

So this area as outlined by this is in a sense open all year for the driftnet fisheries, and to the north is open July–November, and another section open August through October, and the northernmost area is open only in September. So, we have effected, through cooperation with the Japanese, in particular, some restrictions on the fishery in this area immediately south of the Aleutian chain.

However, enforcement indicates that there are serious violations in this zone to the north, but this shows you in a quick way the very complicated nature of it and the vastness of the ocean.

Senator **Stevens**. Thank you very much.

Mr. Lambertson.

Mr. **Lambertson**. Thank you.

The Fish and Wildlife Service has been collecting data on seabirds for a relatively short period of time. The recent data that we have collected, coupled with fragmentary historical data, indicate that the resource is still quite large, though probably significantly reduced from its size about 100 years ago. The most commonly cited causes for the reduction in the size of this population are the introduction of foxes and rats to the nesting islands and, to some extent, the development of the commercial fishery that we are discussing here today.

The Fish and Wildlife Service began collecting baseline data on the seabird resource in 1970. From 1975 to 1979, this effort was very intense, receiving impetus from the need to develop an environmental baseline to support the decision process on offshore oil and gas leasing, especially in the Alaska area.

In 1981, the National Marine Fishery Service began collecting data on the bycatch of seabirds and mammals, as Bill Gordon has already mentioned. That agency and the Fish and Wildlife Service entered into a memorandum of agreement whereby the Fish and Wildlife Service observers could participate in the data collection from 1982 through 1984.

An analysis of this data shows that the Japanese high seas salmon mothership fishery concentrates a large part of its effort in the fishery conservation zone south of the Western Aleutian Islands. The bycatch of seabirds was greatest there.

The birds killed within the area sampled averaged about 163,000 per year by our estimates. Simultaneous colony surveys in the Near Islands at the western end of the Aleutians showed that the impact on the breeding population ranged from about four-tenths of 1 percent for murres to 8.7 percent for tufted puffins.

The conclusion reached was that the mothership salmon fishery by itself does not pose a significant threat to these birds at this time. Data has also been collected that indicates that the catch rate varies enough between fishing areas that caution must be used in projecting data from this fishery that we studied to obtain estimates of the bycatch in other fisheries.

That completes my summary, Mr. Chairman.

[The statement follows:]

STATEMENT OF RONALD E. LAMBERTSON, FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

Mr. Chairman, I appreciate the opportunity to testify at this oversight hearing on resource issues related to North Pacific pelagic driftnet fisheries. As Associate Director for Wildlife Resources for the Fish and Wildlife Service (Service), I am responsible for overseeing the Service's wildlife population management program, which includes migratory birds and three species of non-endangered marine mammals native to Alaska. Your invitation to testify at this hearing requested that I provide information about our current and proposed cooperative research and management efforts to mitigate adverse impacts that may result from pelagic driftnet fisheries. I will attempt to provide that information to the best of my ability.

The Service's role in seabird management and research derives from a number of international treaties and domestic statutes. Systematic collection of data on Alaskan seabird populations has been undertaken during the last 15 years. This effort peaked between 1975 and 1979 in order to address research issues associated with oil and gas development on the outer continental shelf. Research on seabirds presents unique logistical difficulties such that the costs of data collection are high and data accumulates slowly.

In the case of our study involving the bycatch of seabirds in the high seas salmon mothership fishery, our access to the fishery was made possible through a Memorandum of Agreement with the National Marine Fisheries Service. The seabird resource in the North Pacific, although reduced in size from its condition a hundred years ago, is still a large one. There are two groups of resident seabirds. The primary seabirds, such as murres, puffins, auklets and fulmars, number between 25 and 30 million. The secondary seabird group, which includes representatives of taxonomical groups that are not normally associated with the marine environment, such as waterfowl, probably numbers another 15 million. The third and perhaps most numerous group contains albatrosses, shearwaters, and petrels that breed in the Southern Hemisphere and migrate to northern waters during the austral winter, which is our summer. The numbers for just two species, short-tailed and sooty shearwaters, are particularly significant. Estimates range from 18 million for the short-tailed shearwater to 30 million each for both species.

As I noted earlier, we have been involved in investigating this resource for the past 15 years, which represents a very short timeframe in view of overall population trends. The only record which we have prior to this time consists of fragmentary historical accounts from the late 19th century to the 1950's, which suggest that the populations of some species have been reduced during the last century.

The introduction of alien mammals, foxes and rats, and commercial fishing have been the most frequently cited reasons for the population declines. There is evidence also that some of the change is natural. Ulakaia Ridge on St. George is the main nesting area of the island's least auklets. Today, the broken rock that made this site so attractive to these birds is unavailable to them because of the heavy plant growth. One has to suspect that the nitrogen and other nutrients that made this heavy vegetative cover possible were supplied by the birds themselves.

A change in sea temperature of only a few degrees centigrade can drastically change the types of food available to the birds and drastically affect the number of birds the sea will support. As one example, a major warming of the eastern equatorial Pacific Ocean in 1982–83 resulted in a virtually total reproductive failure and temporatory disappearance of the seabird community at Christmas Island, and dramatically affected other colonies in the northeastern Pacific.

If we continue long-term research on seabirds, we should eventually develop an overall understanding of the dynamics of the system that we lack today. The data collected during the last 15 years has greatly contributed to our current knowledge of the ecosystem.

There are five driftnet fisheries operating near or north of the subarctic boundary in the North Pacific Ocean that may influence Alaskan seabird populations. I am not going to attempt to describe these fisheries or locate them for you in any greater detail than is needed to set the context for my discussion of the seabird bycatch. You have fishery experts testifying before you who will, I am sure, provide that information.

We have very little information concerning the recently developed Japanese, Korean, and Taiwanese squid fisheries in the central and western North Pacific. There is some information in the literature relating to the Japanese land-based salmon fishery that is located primarily south of 46°N and west of 175°E. This information was developed by the Japanese themselves. The largest amount of the data which we have directly gathered has been obtained from working with the Japanese high seas salmon mothership fishery operating north of 46°N.

Various Japanese and American observers working aboard Japanese research vessels have sampled the seabird bycatch. From this knowledge base, American scientists have been able to demonstrate that catch rates vary geographically, particularly with distance from land and with the type of gear used. For example, the catch rate is different in the variable sized mesh used aboard the research vessels and the standard mesh used on commercial vessels. The dropout rates and survival rates are also different.

The salmon mothership fishery has changed in size and, therefore, its level of effort has changed. Initially (in 1952) it consisted of three motherships and 57 catcherboats. The fleet reached its largest size in 1959 when 16 motherships and 460 catcherboats fished about 355,000 kilometers of net. Since that time, the fleet has been reduced on five different occasions. The present fleet consists of four motherships and 172 catcherboats fishing 120 kilometers of net. The fleet has also shifted its area of operation further west and north during that time, placing it in closer proximity to a greater number of Alaskan seabirds. This history must be kept in mind because it has some bearing on how to apply the data in the literature to current conditions.

The gillnets used in the fishery are made up of 330 fifty-meter sections (tans), giving them a set length of about 16.5 kilometers. The nets are single-stranded monofilament composed of 121 millimeter and 130 millimeter stretched mesh.

From 1981 through 1983, observers coverage was limited to waters within the U.S. Fishery Conservation Zone [FCZ]. American observers were not allowed to accompany the fleet when it was outside of the FCZ. Our data for the little-known area outside the FCZ is limited to a total of 68 sets obtained through the courtesy of the Japanese.

During the period of our study (1981–1984), the level of fishing effort ranged between 8,395 sets in 1984 and 9,121 sets in 1985. U.S. observers witnessed the retrieval of between 262 and 344 sets in each of these 4 years. The observed catch ranged from 4,127 birds at a mortality rate of 11.6 per set in 1984, to 9,669 birds at a mortality rate of 34.1 per set in 1983.

There was a significantly higher catch rate in the FCZ to the south of the Aleutians where 95 percent of the effort occurs than in the northern part of the zone. The catch rates were also more variable to the south of the Aleutians than they were in the Bering Sea. This underscores the problem of projecting data collected in one area onto other areas where the level of effort, but not the catch rate, is known.

Twenty-one species were entangled in the nets during the four-year study. Short-tailed shearwaters were the most common seabirds killed, and the tufted puffin was the second most numerous. Besides these two, only the horned puffins and thick-billed murres were taken in substantial numbers, but compared to the short-tailed shearwaters and tufted puffins their mortality rate was low. The overall mortality estimates varied from 95,093 birds in 1984 to 245,268 in 1983. For the period of this study, an average of 162,749 were killed each year in this fishery.

Haruo Ogi, a Japanese scientist working with the research fleet, estimates that between 120,000-130,000 seabirds were killed in the salmon mothership fishery in 1981. This is reasonably close to the United States' estimate of 134,000 obtained through direct observation with the commercial fleet. Ogi estimated that 128,000–142,000 birds were taken each year from 1978–1980. David Ainley, an American scientist, believes that when consideration is given to the variation in catch rates in the various mesh sizes used in the research year, and the distance from land, a kill of more than 200,000 is likely for 1978.

An effort was also made to correlate the kill with the breeding population in the Near Islands at the western end of the Aleutians, the group in closest proximity of the fishery area. It was calculated that between 0.4 percent (murres) and 8.7 percent (tufted puffins) of the breeding population was killed each year due to incidental mortality in the salmon mothership fishery.

Despite an annual mortality of over 160,000 seabirds, the Japanese salmon mothership fishery, when viewed in isolation, does not appear to pose a significant threat to the status of North Pacific seabird populations. The impact of squid driftnet fisheries, however, is unclear.

We will continue to collect baseline data on seabird populations ,and monitor trends within these populations to determine the impact of pelagic driftnet fisheries on these birds. If and when we are convinced that the seabird by catch is a serious threat of Alaskan seabirds, the Service has the option to present closure or other management proposal to the North Pacific Fishery Management Council.

Mr. Chairman, this concludes my remarks. I will be happy to answer any questions which you may have.

Senator STEVENS. Thank you very much, and thanks to all of you. Ed, your statement indicates that there is probably a stalemate in our negotiations right now with the Japanese. Has the fact that the Japanese have signed the General International Fisheries Agreement, the GIFA, with us which agrees to the portion of the 200-mile limit law which gives us jurisdiction over anadromous fish that spawn in our waters, does that enter into the negotiations at all?

Mr. WOLFE. I am sorry, Senator Stevens. Has it entered into the formal discussions, the fact that they have negotiated an agreement with us which gives us the right to enforce our jurisdiction over salmon on the high seas?

Senator STEVENS. The GIFA, as I understand it, gives us the right to—rather, requires that the nation seeking admission to our 200-mile limit accede to our jurisdiction under the 200-mile limit for the protection of our anadromous fisheries throughout their complete range. It is my understanding that is still there. Is that not still there, Bill, in that agreement?

Mr. **Wolfe**. Let me explain, and then hopefully I can answer your question. I wouldn't say we have a stalemate, but I don't think we have made any progress to date. However, I think that we have the opportunity this time, for progress. Under the Magnuson Act, we claim management authority over all U.S. anadromous species except during the time they are in another country's zone.

Having entered into a GIFA with the United States. Japan has acknowledged our management authority over U.S. anadromous species. So we have the Magnuson Act, our domestic statute, and we have the GIFA with the Government of Japan and, of course, with Taiwan. And they have acknowledged our fishery management authority over U.S.-origin salmon by entering into agreements with us.

Senator **Stevens**. My question really leads to this. We do a provisional line pursuant to the International North Pacific Fisheries Treaty. They should not fish east of that line.

Mr. **Wolfe**. Are we talking about Japan?

Senator **Stevens**. Japan. But there is an indication now that they are fishing east of the line because of incidental fishery of other fleets in that area east of the line. I would like to know whether we have pursued our jurisdiction based upon the Magnuson Act, which gives us really conservation control over those species.

Mr. **Wolfe**. I didn't get to that, Senator, and I apologize. We are looking at various options to resolve this. One of the options, of course, is to pursue our jurisdiction under the Act. There is no question that we have jurisdiction over those stocks that originate in our zone.

Yes, sir, we are looking at this, but we have not discussed it directly with the Japanese at this point in time.

Senator **Stevens**. Do we have any jurisdiction over the squid fleet? They are in the high seas, aren't they?

Mr. **Wolfe**. I believe we do. Yes, sir.

Senator **Stevens**. Other than the negotiation that Mr. Gordon spelled out with the understandings we reached. we don't have any way to extend jurisdiction over that fleet, since squid do not originate in our waters?

Mr. **Wolfe**. That is correct. They are not anadromous species and do not originate in our waters.

Senator **Stevens**. In terms of your negotiation, when do you think we will know what the results will be?

Mr. **Wolfe**. With the Japanese?

Senator **Stevens**. Yes.

Mr. **Wolfe**. Personal perspective, I think we will have a very good idea where we are on the interception issue with Japan by the time we return from Tokyo in 2 or 3 weeks. I said we were considering different options. Certainly we can always consider the option of withdrawing from INPFC. I personally don't think that it is a very good solution. Pelly is also an option—embargoing the product, as we discussed before. The January allocation is an option, as all the gentlemen at the table have discussed with me before.

To answer your question, I think when we return we will be in a pretty good position to know where we are going if we are going anywhere, and if we are going to resolve the issue in the near future.

Senator STEVENS. Well, I hope you convey to the Japanese also that we have at least two of us here. I can't speak for my friend from Washington, but I know that we are basically a free trade State and are opposed to any concept of real barriers involved in our trade relations with other countries, in particular our trading partner, Japan. We are just totally frustrated on this one, and I think that there is another option left still, and that is to find some ways to really retaliate against countries that insist on violating good conservation practices on the high seas.

Mr. Gordon, I am told that a C-130 on August 26 was working in concert with the *Storis,* and spotted 9 vessels fishing in 46 degrees north latitude, 2 degrees above the boundary mark set for August, 2 degrees above that line. That is why I wanted you to emphasize that line there, Bill. On August 29, the C-130 spotted 24 additional vessels at 45 degrees north, which is one degree above the boundary mark for August.

I am told that the pilot of the C-130 reported that the identification marks for all those vessels which were later confirmed to be Japanese had been obliterated. Now, what can we do about that? Here we have got an agreement, and you spelled that out as being a very good working agreement, and I congratulate you for it, and I think our relationships with the government of Japan are one thing, but our relationships with vessels at sea appear to be an entirely different thing.

And this is why we visited with Mr. Shultz, with Secretary Shultz, to try to see what we can do to get an enforcement regime out there. But how are we going to get these people to live up to these agreements if their fishermen when they get on the high seas just apparently don't give a damn about where the lines are?

Mr. GORDON. Once you recognize it is a vast area out there and your statistics are essentially correct, looking at the summary, of their activities in 1985, we find that there are 49 sight outside the authorized area. A number of those vessels have covered up their vessel markings so they could not be identified, and this year, 1985, is not the first instance that such has happened.

Several years ago I visited in the home port of some of these vessels and passed out photographs of vessels and said, "you gentlemen in this room know who the offender is, and I suggest you take care of it before the United States is forced to take very serious action." That sort of thing got cleaned up then. Now I see that some of them at least are back to their old habits.

Senator STEVENS. The reason it is relevant to this hearing in my judgment is that the information I received about the longest pieces of net that have been cut loose or slipped have come from the vessels where they had suspected they were about ready to be intercepted by our Coast Guard, and they have cut loose their nets and gone out of the area.

I remember one in particular that we brought the information in, the people of Alaska brought the people in here, brought that information to Washington about it, an enormous net, literally miles long, that one. Now, that seems to me to be one of the greatest causes of the amount of netting that is loose out there in the

North Pacific, these people who are already violating the law, who do not want to be caught. Is there any way to identify the netting? Is there any requirement under these agreements that the ship from which the netting has come be stenciled on the nets, or somehow or other have identification so we will know who slipped those nets?

Mr. GORDON. No, there is no requirement particularly in this driftnet fishery, for squid, which is perhaps one of the areas where a lot of them come from. I can envision a world order that would require all gear, regardless of country of origin and the like, to be identified by vessel before it can be fished, and I think it is technically feasible to do so. But we lack the authority, I think, to do that in the world in dealing with these high seas fisheries. I suspect in the INPFC that the protocol could be changed, if we maintain that organization, to require marking of the gear in those areas.

Senator MURKOWSKI. Would you yield for a question on that point?

Senator STEVENS. Yes.

Senator MURKOWSKI. I am wondering, Mr. Gordon, why you couldn't condition, if indeed you want to have identification on the nets, which I think is absolutely mandatory, that when you allocate you consider your allocation under the 200-mile application principal simply saying if you expect an allocation, one of the things you are going to have to adhere to is numbering your nets or identifying your nets, and that is a condition. Now, that is called leverage, but I think it is appropriate if you want something, and it is not unreasonable. Have you ever considered that?

Mr. GORDON. There have been discussions to that effect, and it is perhaps a legal issue.

Senator MURKOWSKI. Why does it have to be a legal issue? Why can it not just be a condition of whether or not they get their allocation?

Mr. GORDON. The argument comes up, Senator, that "we are not fishing in your zone. We are not taking species from your zone. Therefore you should not have authority to regulate the activity of our citizens." It is an international law issue that I think can be dealt with.

Senator STEVENS. By definition here, if I can pursue Senator Murkowski's question, this is gear that we are not using, none of our nationals use. Is that not right?

Mr. GORDON. That is correct.

Senator STEVENS. So as they come into our zone, they are using—their nationals are using on the high seas gear that we would not permit our people to use. I should think that any nation that wants admission into our 200-mile limit should have to agree to our conservation principles within and without the zone.

Mr. WOLFE. Within our zone, I can say there would be no question.

Senator STEVENS. Well, the leverage is to say you cannot fish in the zone unless you comply out of the zone.

Senator MURKOWSKI. If they do not play by the rules that we set down within the zone.

Senator STEVENS. Let me go to Mr. Lambertson. I know that others have questions, and we want to try to complete this hearing if we can this morning. I find your testimony most interesting concerning the bird population. And I think that is an area that your service ought to concentrate on very seriously.

We also—I hope all of us saw the great show the other morning about the puffins in that Sunday morning piece by Charles Kurault. It was a very nice one. I am disturbed at your report that 8.7 percent of the breeding population of the puffins are killed by the mothership fleet. That is 10 percent of the fleet. It seems to me that we have some real gaps in our data concerning the impact of these fleets of vessels on our bird population.

Now, what are we going to do about that?

Mr. Lambertson. Mr. Chairman, one thing that we need to stress is that the rate of bycatch varies greatly from area to area, and the fleet that we looked at was probably responsible for the highest rate of take. For those reasons, it is very difficult to extrapolate from those numbers to calculate the total take. It is our opinion that the catch from other offshore fishing especially that by the squid fishery is not nearly as great as the take associated with the near-shore fisheries.

Senator Stevens. What about domestic fishing fleets? Do you have any data about their impact on our bird population in the North Pacific?

Mr. Lambertson. No, we do not. The only data which we have concerns the mothership salmon fishery. We had the opportunity to collect some information for offshore oil and gas leasing to find out what was happening in that area and we took that opportunity. We have done very little work in assessing bycatch from domistic operations.

Senator Stevens. Since those oil wells have not been drilled and the fishing fleets are fishing every day, it would be nice if we would concentrate on the damage being done now, and not put so much concern onto what might happen later with regard to these birds. I am surprised. I cannot remember in the time I have been here. I ask my colleagues. I cannot remember any assertion that any U.S. fishing fleet has had an impact on birds, the bird populations. Your statement was the first I had heard about the serious threat to birds off our coast from this kind of a fishing fleet.

If that is the case, I think we ought to get some further research and documentation on that, because again, I think Kurault's kind of brief visit into those islands to see the magnificient bird life out there. We have set aside the cliffs now as a national sanctuary. Certainly we ought to be getting some information about the point that you have raised, that there is a potential for serious harm. Am I overstating that?

Mr. Lambertson. No, Mr. Chairman. Our greatest concern is, as the others have mentioned, the nets that break loose and drift in close to those bird colonies.

Senator Stevens. I understand that. It is the ghost nets that are marauding now, that are killing not only fish, but they are killing fur seals and sea lions and other small sea mammals, and now they are into the bird area, and have had a significant impact in at least one area, right?

Mr. Lambertson. That is correct.

Senator **Stevens**. Well, I think that we ought to pursue even further the concept of banning these nets and the use of them, but above all we ought to find some way to have them identified. If experience is the same in terms of marking the nets as it is in obliterating the marks that are required by international law on the vessels, I am not sure, but we may be fooling ourselves if we just say another agreement is going to change this problem.

Senator Gorton.

Senator **Gorton**. Mr. Gordon, I would like to follow up on an interesting subject which Senator Stevens began with you, and that is what is obviously the deliberate violation of the law and the lines on this map by ships which have their identification masked to the best of their ability to do so. What is the penalty under the law if a ship, a fishing vessel is caught under those circumstances?

Mr. **Gordon**. Well, if we are able to intercept them, if they were not marking their vessels in the U.S. zone, and we encountered them, we could seize the vessel, bring it ashore, turn it over to the U.S. attorney's office, and seek—the maximum penalty would be to take everything.

Senator **Gorton**. Including the ship?

Mr. **Gordon**. Including the ship. After due process. That is maximum.

Senator **Gorton**. That is only within the zone?

Mr. **Gordon**. Within the zone.

Senator **Gorton**. Has that ever taken place? In other words, the penalties are the same as they would be for drug running, at least potentially, loss not only of the cargo but of the ship?

Mr. **Gordon**. Yes.

Senator **Gorton**. Has that kind of penalty ever been imposed?

Mr. **Gordon**. I don't recall that we have ever extracted absolute seizure of a vessel. Yes, we have on a couple of occasions, and I think they were both Japanese. We have extracted high-monetary penalties. I think the maximum is over $2 million for violations of the Magnuson Act.

One of the big problems is identification of these vessels if we cannot intercept them, and we have found the Japanese fisheries agency to be extremely helpful with information we turn over to them in terms of penalizing the violators back in the home island, and they have taken fishing privileges away. They have arrested the skippers, tied the vessels up for as much as 6 months, and in some cases denied their permit to even reenter the area, the fishery. They have to find other fisheries to enter, which is very difficult under their administration.

So the government officials have been very helpful, but we have to often identify the vessel adequately for them to carry out that act. They do have fishery patrol vessels out there trying to keep herd on these. As you can imagine, with that mass of an area and the number of vessels, it is a very difficult thing to do.

Mr. **Wolfe**. Mr. Chairman, to follow up on that point from the international perspective, to the best of our knowledge in the Department of State, no nation has ever exercised jurisdiction beyond its zone over its anadromous species. That does not mean it cannot be done. We believe we have the ability to do that.

Senator **Stevens**. You mean in modern times? Remember that we did seize the pelagic fur sealing vessels and burned them, and they took us to the World Court, and we thumbed our nose at the World Court even then.

Mr. **Wolfe**. Were these anadromous species?

Senator **Stevens**. They are anadromous mammals.

Mr. **Wolfe**. That is just a point for clarification.

Senator **Gorton**. Let me follow up with you. You were very diplomatic. You did not indicate either optimism or pessimism about your upcoming negotiations. Are you willing to do so? Do you think that you are going to be able to make progress, which apparently you have not made in your previous negotiations?

Mr. **Wolfe**. If I tell you what was coming to mind, it would sound like further diplomatic garbage. I am cautiously optimistic.

Senator **Gorton**. That is a good phrase.

Mr. **Wolfe**. In all seriousness, Senator Gorton, we would not be traveling, or spending the resources to go to Tokyo for the third set of talks, if we did not have some optimism. If we do not come back with something in our hands——

Senator **Stevens**. Then do not come back.

Mr. **Wolfe**. That is funny. As I was leaving the office this morning, that is exactly what Ambassador Negroponte said. But I am cautiously optimistic, and I hope we will come back with some progress having been made.

Senator **Gorton**. If you are seriously willing to use the threat, the possibility or the probability of appropriate sanctions in other areas, you are met with an unyielding position?

Mr. **Wolfe**. In other areas, or in the fisheries area. As I have told the Government of Japan, there is tremendous congressional pressure on me and Bill Gordon to use allocations as a lever, and that is a very strong possibility come January, the beginning of the allocation season, if we are not satisfied with the progress in these talks.

Senator **Gorton**. Finally, in your written testimony, you of course speak in modest detail of Taiwan and a few words on Korea, and then deal at greater length with Japan. Does that exhaust all of the areas in which any of the problems discussed here at this hearing originate?

Mr. **Wolfe**. In terms of countries?

Senator **Gorton**. Yes.

Mr. **Wolfe**. To the best of my knowledge. I have just been dealing with Japan. Korea and Taiwan are relatively insignificant problems which I am aware of. If there are others, I am not aware of them.

Mr. **Gordon**. Only minor other countries.

Senator **Gorton**. Thank you, Mr. Chairman.

Senator **Stevens**. Thank you. I am delighted to see my colleague here, Senator Murkowski, who is quite interested in this subject and asked us to pursue it. Senator.

Senator **Murkowski**. Thank you very much, Mr. Chairman.

I want to commend you and the other members of your subcommittee for initiating these hearings into an area that obviously is one where a great deal of knowledge is lacking. I find it incredible to reflect on the realities associated with the miles of net that apparently are out in the North Pacific each night, somewhere in the area of 20 to 21,000 miles of net.

That may be five or six nets across the North Pacific all the time theoretically are coming and going. The realization that the ability to manage that resource is not an ability, it is an inability. You cannot possibly manage it. The likelihood of additional fisheries going into the area, China, there is no reason to think that they will not at some point in time initiate an offshore fishery that could put more and more pressure on.

Mr. Chairman, I have been involved a good deal in the trade with our neighbors in the Pacific that are involved in the fisheries issue as well. I find it very frustrating that there is not a communication on the exceptions or violations or the flagrant abuse of traditional international identification. When we negotiate trade matters with these countries as well, they ask for concessions, and yet there are extraordinary violations occurring in the fisheries, and we do not seem to be able to communicate internally within our State Department.

The fisheries people handle the fisheries matters, and the trade people handle the trade matters, and I know you are as frustrated with that as I am. But I would suggest, Mr. Chairman, a more conscious effort by the Congress and members of the appropriate subcommittees to initiate a linkage because I think only then can we be more forceful in our demands.

As you know, Mr. Chairman, I have held a number of hearings on the fur seal protocol involving the traditional hunt by the Pribilovians, the Aleut population of the Pribilof Islands. The catch of fur seals in these large nets is an estimate of 1,000 to 4,000, up to 50,000. I understand this is a draft EIS from the Department of Commerce, and it indicates a take of fur seals may be as high as that.

I am not suggesting for a moment that it is, but when you consider that the protocol initially authorized 23,000, 22,000 or 23,000 fur seals to be taken on the Pribilofs, in conjunction with Canada, Japan, and the Soviet Union, and they may be catching as many as 50,000, that points to the efficiency and the tremendous devastation that this type of fisheries provides, whether it be the fur seals or birds, and I think it is a situation that has to be highlighted.

The Americans in the environmental community should evaluate just what we, as Senator Stevens indicated—we talk about the bird life and the concern that has been expressed over exploration in the North Pacific, but good heavens, I think we all recognize that these nets in their efficiency devastate bird life, devastate marine mammals, and on and on and on.

We do not have the knowledge. I think the environmental community should stand up for the right and get behind on an international basis, Greenpeace or others, the necessity of encouraging the environmental community throughout the world to address this specific question, because, you know, the realities of how efficient this could be.

I would ask you, any one of you, to indicate how long can this kind of a fishery go on, and we still have a resource there to fish.

Mr. Gordon. It would be pure speculation who does who in first under any circumstances.

Senator **Murkowski**. Mr. Chairman, my specific concerns have already been pointed out, that the reality of the effectiveness of this fishery and the fact that something has got to be done, and I commend you for initiating a start on it, and would encourage a greater, I think, distribution of the effectiveness and the implication of what this means as far as——

Senator **Stevens**. Mr. Lambertson, have you ever seen a report on the sea bird kill associated with the enormous oilspill that took place in Mexico several years ago?

Mr. **Lambertson**. No, I have not.

Senator **Stevens**. Would you inquire and see if there was one? I am serious. I think we are spending a great deal of our money in researching on the potential harm of exploration or various other kinds of activities, and yet here we have got an example. I would venture to say that these nets, if their numbers are as large as we have heard this morning, can do in a day more damage than an oilspill did down there in Mexico over a period of months.

Mr. **Lambertson**. That is probably true.

Senator **Stevens**. Unless we can join together and find some way to eliminate these, I do not know. How would you ever get them out? Suppose we got them to stop using them altogether. These are not biodegradable nets. They will be there until the end of time now, will they not?

Mr. **Gordon**. Yes. The problem with a lot of netting is that it does ball up, and it no longer fishes for fish effectively, but sea birds and other things poking around in them become entrapped, whether they are at sea or washed up on the beaches.

Senator **Stevens**. They become less of a risk for the marine population and become more of a risk for the sea birds?

Mr. **Gordon**. I have seen, as you have, I am sure, a lot of this discarded material washed up on the beaches of the Aleutian chain islands. It just lays there until it is buried by sand or otherwise removed.

Senator **Stevens**. And of course then it kills a lot of the life along the beaches. I think this is really sad. We had a similar hearing. We did this once before, and nothing has been done since. That is what bothers me. We have been frustrated. I do not say you have not tried, but we have been totally frustrated in dealing with the people who use these nets. We must find some way. We must find some way to alert Congress and the American people as to the danger of this.

I welcome the report that you will give us when you return, Mr. Wolfe. Thank you very much.

Senator **Murkowski**. Mr. Chairman, if I could just ask one other question, a very short one, without tipping your hand to the fact that this is the third meeting and the other two had been unsuccessful, and you have, Mr. Wolfe, cautious optimism, what is going to be the incentive for the Japanese to give you any relief which would indicate that you are making some progress.

Is it something that is apparent? Is it the trade pressures or something else that might cause them to be responsive?

Or is it the implication that we may just decide that we want to cancel the offshore salmon agreement that we had with them?

Mr. **Wolfe.** I could give you a lot of answers, but the most important is probably the forum this morning, and you gentlemen expressing your concern on behalf of the Congress. I think the message is loud and clear. There is major concern. We know that. We have been dealing with it for quite a few years. It has obviously surfaced to this high a level, and I think that, if anything is a major impetus. You have mentioned a trade connection. I did not respond to that at all. Other suggestions have been made. Certainly allocations have been brought to my attention before, so I think there are quite a few areas that will require serious thought.

Senator **Murkowski.** Well, I would not just make the assumption that because of this hearing or the attitude of various Senators toward this issue, if you look as a comparison in the trade area, there has been a tremendous expression and howl and gripes, but we still see an increase in our trade imbalance, and we see an increase now in our service imbalance, so do not be swayed by the emotions in Congress. It may be a start, but I think you have to use leverage. They want something from you, and it is a condition. It becomes a condition.

Mr. **Wolfe.** We read you loud and clear.

Senator **Stevens.** Thank you very much, gentlemen. We appreciate your courtesy.

Our next witness is John Hodges, of McDermott, Will & Emery, who represents the Japanese Fisheries Association, the Federation of Japanese Salmon Fishery Cooperatives, the Northern Seas Salmon Mothership Owners Council, the National Salmon Driftnet Fisheries Association, the National Common Squid Fisheries Association, and the National Driftnet Fisheries Association.

STATEMENT OF JOHN A. HODGES, REPRESENTING JAPAN FISHERIES ASSOCIATION, FEDERATION OF JAPAN SALMON FISHERIES COOPERATIVE ASSOCIATION, NORTHERN SEAS SALMON MOTHERSHIP OWNERS' COUNCIL, NATIONAL SALMON DRIFTNET FISHERIES ASSOCIATION, NATIONAL COMMON SQUID FISHERIES ASSOCIATION, AND NATIONAL DRIFTNET FISHERIES ASSOCIATION

Mr. **Hodges.** Good morning, Mr. Chairman and members of the Committee, my name is John Hodges. I am here to represent the six Japanese fisheries associations that you have just mentioned, Senator Stevens. I would like to present a statement which I would like to have entered into the record, and I will briefly summarize it.

My message is a simple one: the Japanese fisheries are responsible and well-managed with respect to the conservation of marine resources. I will cover the three fisheries involved, salmon, squid, marlin, and other fish. I will cover their management, marine mammals, interception of salmon, sea birds, and debris in the ocean.

Senator **Stevens.** Why do we not file your statement for the record, Mr. Hodges, and have you summarize it just briefly? And I have got a couple of questions. I do not know about Senator Murkowski, but I have read your statement. I would be pleased to have you summarize it for those here so that they will have a background before I ask you the questions.

Mr. **Hodges**. Yes, that is fine, Senator. My plan is to summarize it. As indicated in my statement, salmon fishing goes back almost a century with the Japanese, but because of the extensive migration of salmon, Japan has recognized the need for international cooperation in their management and conservation. That is why it has signed, along with the United States and Canada, the International Convention for the High Seas Fisheries of the North Pacific Ocean, under which there has been over 30 years of extensive management and conservation of the species.

The Japanese industry is subject to extensive international regulation under the Convention, including, as you mentioned, the abstension principle which in 1952 provided that there would be no fishing east of 175 degrees west in the North Pacific and the Bering Sea.

The FCMA, which was passed in 1976, instituted the 200-mile Fisheries Conservation Zone. The Convention was renegotiated in the light of the FCMA, calling for the moving of the abstention line to 175 degrees East, except for a portion of the North Central Pacific outside the U.S. FCZ. Additional areas where the North American salmon and marine mammals are protected include 775,000 square miles outside the U.S. FCZ.

The Japanese fleet in return is permitted to fish in a small 70,000 square mile area inside the FCZ during a small period of the year, June 10 through July 31, where its catch is primarily of Asian-origin salmon.

The North Pacific Fisheries Act was amended in 1978 to take this into account, and during its consideration——

Senator **Stevens**. Mr. Hodges, I have been here in this business since 1952, and particularly I have been in the Congress since 1969, and I really do not need you to tell me what we have done in Congress during that period. I would like to know for the record what your clients intend to do about the driftnet problem.

This is a driftnet hearing, and I want to be courteous to you, but I want you to understand that the whole recitation of your statement—I do not argue with it from the point of view of an historical basis. I might argue with you about some other things which I will say in a minute, but I really do not think we need you to tell us what Congress has done during the period that I have been here, and I was downtown before that.

Mr. **Hodges**. Yes, sir. Senator, with respect to marine mammals, the industry is operating well below the permit level of 5,500. The take of marine mammals under that permit is minimal. The fleet is also operating in conformity with legislation that provides for the phase-in of improved gear. There will be additional permit proceedings by the National Marine Fisheries Service of 1986. In the meantime, we are continuing to work on a number of studies relating to marine mammals.

The incidental taking of salmon has been reduced to an insignificant level. Contributing to that is not only the renegotiation of the Convention but also a variety of voluntary measures which are set forth in my statement, including the voluntary reductions by the Japanese of the incidental take of salmon.

In Japan's view, it would be extremely burdensome to further reduce that take of North American-origin salmon since it would severely reduce the catches of Asian-origin salmon. I note also that in negotiations with the U.S.S.R., it has been agreed that the Japanese may take up to 30 million U.S.S.R.-origin salmon. In the light not only of the biology, but of these factors, we certainly feel that the small amount of North American salmon that the Japanese are taking is not significant.

The Chinook salmon returns are large and have been increasing. This is the 6th straight year where the harvest of Alaskan salmon has exceeded 100 million. In 1984 and 1985, there have both been records set in the Alaskan commercial salmon fisheries——

Senator STEVENS. Mr. Hodges, let me tell you, your statement is correct except for the fact that the runs don't exist for your client's fishermen. There is a decline in important runs. We had to close the Kuskokwim fishery this year. Your clients take the majority of the fish in the area of the runs that they impact. It is true that it is a small amount of the total population, the total return to Alaska of Chinooks, but in the area of the return that they impact, they have devastated it. We closed the fishery they impact this year. But the major thing is again, I would like to get you back to driftnets. We called this hearing for driftnets. I think driftnets, the marauding, murdering nets that are out there present the worst hazard to the future of the North Pacific that is imaginable. It is like AIDS to the population of the world. Seriously, it is there. It is not going to go away. Even the ones that are there now, we can do nothing about it. What can we do about preventing the spread of this? Have you advised your clients of the serious concern of the Congress of the United States concerning those nets?

Mr. HODGES. I absolutely have. They are taking a number of measures——

Senator STEVENS. Tell me about that. What are they doing to make them biodegradable?

Mr. HODGES. Senator, I would like to present a number of items here. In addition, I have listed a number of conventions——

Senator STEVENS. They have signed all kinds of agreements. I do not fault the Japanese Government. I wish we could find some way to punish the members of their fleet that continue to violate not only our laws but the agreements that their government made.

Mr. HODGES. Senator, I would like to present to you some exhibits and some photographs. First of all, it is illegal under Japanese law for these nets to be cut loose, but not only besides being against the law——

Senator STEVENS. If it is illegal, how do we justify the amounts that are there now?

Mr. HODGES. Aside from discarding nets being illegal under Japanese law, there are practical reasons why lost nets are at a minimum. The nets are retrieved, rolled up, and repaired to the extent that they can be. To the extent they cannot, they are brought back to shore. They are then processed, recycled, cut up into small pieces, and made into spools, shoe heels, a number of other things that demonstrate the reprocessing of nets into useful items. I would like to show you materials that I obtained in Japan.

Senator **Stevens**. Do you dispute the figures that have been supplied to us by the people that are here representing our Government about the increasing number of these nets that are being cut loose and set adrift in the North Pacific?

Mr. **Hodges**. I am personally unaware of any cutting loose of nets. Economically it does not make sense. The nets cost 26,000, 33,000 yen per tan——

Senator **Stevens**. It makes sense, rather than being intercepted by Coast Guard cutter. You cannot pull that net and get out of the area very fast. Those vessels, we have pictures of them 2 and 3 degrees above the line that was agreed to by the Japanese Government. They cut their nets so they could get the hell out of there.

Mr. **Hodges**. Senator, I think at this point you are discussing squid. In that regard, I would like to address that, because I think that is——

Senator **Stevens**. I could give you some pictures of salmon ones, too, if you would like to have it.

Mr. **Hodges**. Senator, if there are any violations going on here, we want to know about it. We do not want to be sullied by any violations. First of all, if a person fails to mark a boat, he is in violation of Japanese law.

Senator **Stevens**. Well, that is true, but we have got the testimony. We have got the photographs, but we cannot identify them.

Mr. **Hodges**. The Japanese Government should receive that information, and those boats will be landed on, I can assure you.

Senator **Stevens**. But you represent the people who do it. You do not represent the Government of Japan. You represent the six organizations who deploy those vessels that are violating not only our law, but they are violating international law by not having proper marking.

Mr. **Hodges**. If that is going on, the associations want to know about it. We have had skippers' panels. We are working with the fishermen. It is not in the interest of these associations to have any member violate the law. It is certainly embarrassing, I can assure you, for anyone to be in a situation where statements like this are being made concerning himself.

Senator **Stevens**. Do you represent the Hokuten Trawlers? Are they part of your client's groups?

Mr. **Hodges**. Senator, the groups I represent are the six associations that I have set forth at the beginning of my statement. Beyond that, I do not know. I would like to have the information.

Senator **Stevens**. I will give it to you. We have now improved it by virtue of documents that were on a seized vessel. I am sure you have heard about it. The Hokuten Trawlers initiated a system to thwart the Coast Guard enforcement efforts in the North Pacific along the Aleutian. Individual vessels were designated as decoys, and they were later compensated by the vessels in the fleet which targeted prohibited species. We found these records on these vessels, mind you, and in connection with that, they had a whole system of deception, not only deceiving us, but deceiving their own government.

Now, that is a proven record of one of the Japanese fleets.

Mr. **Hodges**. Senator, if that kind of thing is going on, we want to know about it.

Senator **Stevens**. I will be glad to document it. We thought we had documented it. We think it is high time that you take the message back to your clients. If there is anything I can do as a member of the U.S. Senate to bar importation of any product harvested by any of your client's fleets, I will do it until there is some effort on behalf of those fleets to stop cutting these nets loose.

Mr. **Hodges**. We are hearing you loud and clear on that. This message is going back, and I can assure you that the industry and the government will do everything that they can to address this issue.

Senator **Stevens**. We thank you. We will talk about the relationship and the conservation efforts and things we might do to agree later, but I think until we all can find some way to stop these increasing numbers of marauding nets being cast loose in the North Pacific, we are just standing on the AIDS border. There is no question about it. All of those nets that go out and kill more birds and more fish and more everything, meanwhile more and more are being cut loose every day. But we do not know why your clients even use the nets. No other nations in the world use those nets except those foreign fishing fleets in the North Pacific.

Mr. **Hodges**. Senator, you mentioned the sea birds. I requested the National Marine Fisheries Service to supply me with statistics on this, and I received a chart from it indicating that in 1984 there were approximately 79,000 sea birds that were killed within the USFCZ. Of those, 66 percent or approximately 52,000, were short-tailed shearwaters, which are from the Southern Hemisphere. There are at least 16 million of them that come from Tazmanian rookeries. These rookeries are subjected to a directed taking in Tazmania of well over a half million animals per year with apparently no effect on their population since the 1800's.

Senator **Stevens**. Were those nets designed to catch birds?

Mr. **Hodges**. No, sir, they are certainly not.

Senator **Stevens**. Are you telling me we should close our eyes to the fact that they are being killed by nets, just because of the fact that there might be a harvest in the country of origin.

Mr. **Hodges**. Absolutely not, Senator. I am not attempting to say that. I am attempting to put the issue into some context as to the number of sea birds that are being killed in the FCZ. In our view, Japan, as my testimony sets forth is doing a number of things in this area. We are monitoring, we are testing gear to try to reduce the mortality. We have explosive devices which we are testing which actually are quite dangerous to, and have caused injury to, the Japanese who put them out. We are addressing this issue, Senator, I can assure you. I could not be any more sincere about that.

We are not marauders. We are not trying to give AIDS to the North Pacific. We are acting in a responsible fashion, doing everything that we can. And we will do more. We want to cooperate. We think it is an important fishery. We do not want to be embarrassed in a situation where the U.S. Government is accusing members of these fleets of violations. If there is something going wrong, we want to take care of it, and we will, I can assure you.

Senator **Stevens**. Well, let me say, I practiced law. You are representing your clients. You are representing them well, and I think they are well served by your advice. I mean nothing personal in my comments to you, but last night I met with 10 members of the Japanese Diet, and we urged them to get members of the Diet to meet us somewhere, either in Japan or in the United States, so we can discuss with elected representatives of Japan some vital issues.

I served notice on them on our issues or these issues concerning the North Pacific, and we are going to pursue this. We are going to find some way so that they can start instilling the same discipline on their fishermen that we have on ours. Our fishermen cannot use these nets. We would fine them, seize their boats, and prohibit them from fishing if they used these nets.

Now, Mr. Hodges, that ought to be a sufficient message to the Japanese that we find the nets in and of themselves reprehensible. The nets are the things that are killing these fish and birds and mammals in vast numbers. Your fishermen are not killing, but they are the ones that are bringing the nets into the North Pacific, and as far as I am concerned, they are the ones that are bringing calamity and plague to the North Pacific.

Now, somehow they have got to get the message we want those nets banned. I do not know how to do it, but I am going to find a way. I am going to find a way some time to get them to listen to us, and I hope the Diet will listen to us. We have not been able to—I have gone over and met with members of your organizations. I do not know if you know that, but I have in Japan met with them. I met with them here when they have come over. We have dealt with the Japanese ambassador.

We have gone over and visited with the government. We have just been completely frustrated in trying to find any way at all, and if the Japanese continue to do it, obviously the Taiwanese and the others are going to continue. It is only when the Japanese stop that we will be able to stop the others. And I hope you are taking that message, and I assure you that members of the Diet with whom we met last night got that message. We thank you.

Senator **Murkowski**. Mr. Chairman, I have had an opportunity also to be at that meeting with the members of the Diet. I was there that evening before at a dinner that I hosted, and I am absolutely convinced that the members of that parliamentary counterpart to our Senate, Congress, are vitally interested in working out some of these problems, and if we cannot work them out with the private sector handling them, then government intervention will take place, both on behalf of the Japanese Government as well as our Government.

My question to you, sir, is, you have indicated your commitment to responsibility in the sense of the fisheries and the manner in which it is conducted, and so forth.

Mr. **Hodges**. Absolutely.

Senator **Murkowski**. Would you be willing to recommend to your clients that since the average net that is being fished by the Japanese, approximately 9 miles long, that every quarter or half mile, the net itself, there is an identification of the company fishing the net and a positive identification of those responsible for fishing that net itself? I know that buoys are marked, but we are not concerned about the buoys. We are talking about quasi-permanent tag on the net at intervals so that the net could be readily identified if it broke loose, so that there would be enough of it to recognize that you had a ghost net out there, or if there were substantial evidence of damage of either mammals or sea birds, that it could be identified.

It seems to me what the senior Senator from Alaska is attempting to generate here is some scientific facts, which is certainly in your best interest and the best interest of your clients, so my question is, are you prepared to respond to the suggestion that identification be on the nets? Would your clients agree to that?

Mr. HODGES. Senator, I will say, and as you have already noted, there already is the permit number on the buoys.

Senator MURKOWSKI. I am taking about the nets.

Mr. HODGES. It seems to me that it certainly is worth exploring. If they can put it on the buoys, then the question is, why can't they put it on the nets? I certainly will take that back to the industry and will do everything to explore it. I am not in a position at this moment——

Senator MURKOWSKI. I am not speaking for the chairman, but I can assure you from my point of view it will be very interesting to have your clients through yourself, Mr. Hodges, respond to that question, and specifically whether or not your clients would agree to identify at appropriate intervals their nets.

Mr. HODGES. Senator, if we could respond to that in writing, I would like to be able to confer with the industry, but it certainly does seem to me that on its face, without looking at the technical issues, there is currently some identification already and perhaps something can be worked out for further identification. We will certainly explore it and then get back to you.

Senator MURKOWSKI. My last question, Mr. Chairman, is, we all agree that there is not enough scientific evidence, but if there is scientific evidence to indicate that there is 50,000 fur seals taken, and since Japan fishes most of the monofilament nets, and a tremendous amount of sea birds taken, are your clients prepared to take appropriate action to fish by some other method that does not involve this tremendous kill of marine life, if indeed we can prove that this is occurring?

Mr. HODGES. Well, I will have to take that back to the industry. It is a hypothetical situation. I think in general my answer would be that the appropriate way to handle these kinds of things is to try to find countermeasures. This situation of sea birds, for example, you have got experimental gear.

We all know in the tuna/porpoise situation there were allegations of 300,000 marine mammals being killed back prior to the time of the Marine Mammal Protection Act in 1972. Through progressive countermeasures, those mortalities, assuming that those figures were accurate, and I am not saying that they were, have been reduced extraordinarily. Thus, the general philosophy of the United States in its management approach has been to try to find countermeasures to deal with issues either through development of additional gear—we have, for example, as you know——

Senator MURKOWSKI. I know. Let us get back to my question specifically. If it can be proven that the scientific evidence of this type of fishing is devastating in reality to marine mammal and bird life, are they prepared to recognize that and do something else?

Mr. HODGES. I will simply have to take that back to the industry.

Senator **Murkowski**. I would appreciate knowing.

Mr. **Hodges**. Countermeasures should be developed to deal with the matter.

Senator **Stevens**. Thank you very much. I have got to move on, Senator.

Senator **Murkowski**. I think your point is one that is evident, Mr. Chairman. We do not allow it, and they do, and the question is, how bad is it, and that is what you are attempting to find out.

Senator **Stevens**. Thank you very much, Mr. Hodges. We look forward to your responses to our questions.

[The statement follows:]

STATEMENT OF JOHN A. HODGES

Mr. Chairman and Members of the Committee, my name is John A. Hodges and I am a partner in the law firm of McDermott, Will & Emery in Washington, D.C. I am pleased to present a statement on behalf of six Japanese fisheries associations. The associations very much appreciate the opportunity to appear before the Committee and participate in your deliberations relating to the National Ocean Policy Study.

My message is a simple one: the Japanese fisheries in the North Pacific are responsible and well-managed with respect to the conservation of marine resources.

The six associations are the following. The Federation of Japan Salmon Fisheries Cooperative Association represents the catcherboats in the Japanese high seas mothership salmon fishery. The Northern Seas Salmon Mothership Owner's Council represents the motherships in that fishery. The National Salmon Driftnet Fisheries Association represents the Japanese landbased salmon fishery. The National Common Squid Fishery Association represents the Japanese flying squid fishery. The National Driftnet Fishery Association represents the fishery for marlin and certin other fish. And the Japan Fisheries Association provides representation with respect to these and other Japanese fisheries.

I. SALMON FISHERY

A. The regulatory framework

Salmon fishing in Japan has a tradition of almost a century and has a great importance to Japan. At the same time, Japan recognizes that the extensive migration of salmon in the ocean necessitates international cooperation for proper management and conservation. To that end, it has joined with the United States and Canada under the International Convention for the High Seas Fisheries of the North Pacific Ocean ("Convention" or "INPFC"). Under the Convention they have successfully strived together on a cooperative basis for over 30 years for conservation and management and for the conducting of valuable studies on the resources in the area.

The Japanese high seas salmon fishing operations are subject to a extensive international regulation under the Convention. As signed by the United States, Japan, and Canada in 1952, the Convention introduced an "abstention principle" under which Japan agreed to abstain from fishing for salmon East of longitude 175°W in the Northeast Pacific Ocean and Bering Sea.

After the passage of the Fishery Conservation and Management Act of 1976 ("FCMA"), which initiated a 200-mile United States Fishery Conservation Zone ("FCZ"), the Convention was renegotiated to bring it into conformity with the FCMA.

The Protocol amending the Convention was signed by the United States, Japan, and Canada in 1978. The Protocol moved the abstention line to 175°E longitude, except for a portion of the North Central Bering Sea outside the United States FCZ. Additional areas where North American salmon and marine mammals are protected include approximately 775,000 square miles outside the FCZ. The Japanese fleet, in return, is permitted to fish for salmon in a small area (70,000 square miles) inside the United States FCZ between June 10 and July 31 each year, where its catch is primarily of Asian origin. In addition, under Article X of the Convention as amended by the Protocol, the parties agreed to carry out a scientific program concerning salmon and also marine mammals taken incidentally in the course of fishing for salmon.

The Annex to the amended Convention also provided, in paragraph 1(c), that the Japanese salmon fleet would not be required to have a general permit under the Marine Mammal Protection Act during the period ending June 9, 1981. The government of Japan and the United States agreed to conduct a cooperative program during that period to determine the effects of the Japanese salmon fishery on marine mammal populations and research on reducing the incidental take of marine mammals in the fishery. The scientific program was spelled out in a Memorandum of Understanding between the United States and Japan.

The North Pacific Fisheries Act of 1954 (16 U.S.C. § 1021, et seq.), which implemented the Convention, was amended in 1978 to reflect the amended Convention and Annex.

In this process, Congress fully recognized the benefits of continuing to permit the Japanese fleet to fish within the United States FCZ.

The Senate Report to accompany the North Pacific Fisheries Act Amendments stated: "The newly agreed measures greatly limit the total ocean area available to the Japanese fleet. With the exception of a very limited area in the Bering Sea outside the U.S. fishery conservation zone, the new measures in effect move the existing 'abstention' line for both the landbased and mothership fleets from 175°W. longitude to 175°E. longitude, and provide seasonal closures for large additional areas outside the U.S. 200-mile zone. The effect of these combined measures is to provide a high degree of protection for U.S. salmon by moving the Japanese fleet out to areas where Asian and U.S. salmon are known to intermingle. These measures do permit the Japanese to fish for a limited period within a small area inside our 200-mile zone. However, the fish caught there are primarily of Asian origin, and in exchange for this the Japanese agreed not to fish in areas roughly 10 times as large outside the U.S. fishery zone. The alternative to this approach would have been to simply close our 200-mile fishery conservation zone to the Japanese fleet; however, this would allow the Japanese complete freedom to fish the vast areas of the North Pacific beyond our zone. In addition, simple closure of our 200-mile zone would have permitted the Japanese to concentrate unlimited amounts of fishing effort in rich salmon fishing areas just outside our 200-mile zone." S. Rep. No. 924, 95th Cong., 2d Sess., reprinted in [1978] U.S. Code Cong. & Ad. News 1080, 1082–83.

Similarly, the House Report stated: "It should be noted . . . that the Japanese would not be obligated to respect the 175 degrees west longitude abstention line if the Untied States withdrew from the INPFC and simply excluded the Japanese from fishing for salmon within the U.S. 200-mile zone. If the Japanese began fishing east of the existing abstention line, the Japanese mothership fishery would have access to North American salmon in the Gulf of Alaska. U.S. scientists estimate that Japan could harvest approximately 16 million North American salmon in the Gulf east of the existing abstention line and beyond the U.S. 200-mile zone. There are, therefore, substantial benefits to be derived from renegotiating the INPFC so as to extend the abstention line 10 degrees further west, even though the new agreement does permit some Japanese fishing activities for salmon within the U.S. fishery conservation zone." H.R. Rep. No. 1194, 95th Cong., 2d Sess. 10–11 (1978).

B. Marine mammals

In the light of the forthcoming expiration on June 9, 1981, of the waiver of the requirement to have a general permit under the Marine Mammal Protection Act, the Federation of Japan Salmon Fisheries Cooperative Association submitted to the National Oceanic and Atmospheric Administration an application for a general permit for the three-year period of 1981–83.

After formal hearings, NOAA determined that the stock of Dall's porpoises and other marine mammals were within the range of optimum sustainable population and that the proposed taking would not be to their disadvantage. NOAA therefore granted a three-year general permit for the annual taking in the United States FCZ of 5,500 Dall's porpoises, 25 northern sea lions, and 450 northern fur seals.

In 1982, Congress amended the North Pacific Fisheries Act to extend the Federation's permit through June 9, 1987. The legislation called for the introduction of new fishing gear or techniques of both intended to reduce porpoise mortality. This were to be introduced into the fleet on the following schedule: 25 percent of the fleet in 1984; 50 percent in 1985; 75 percent in 1986; and 100 percent in order to be eligible for a permit for the 1987 fishing season. This timetable has been faithfully adhered to by the Japanese fleet.

The legislation also calls on the Federation to assist as requested in meeting the objectives of the research program agreed to by the Governments of the United States and Japan and to provide appropriate funding to carry out a joint research program on Dall's porpoises. NOAA has found that the Federation "[h]as shown exemplary cooperation in meeting these two conditions." NOAA, "Final Action Plan, Dall's Porpoise Program, 1985," p. 18. The Federation has also met its reporting and recordkeeping requirements under the permit. Id.

In addition, the legislation requires an annual report on the activities of the Federation and the Government of Japan with respect to reduction in the incidental take. It also requires NOAA to publish a report on its annual review, and a proposed action plan and a final action plan for the forthcoming fishing season.

These various actions fit in closely with those under the INPFC, which studies marine mammal issues related to the fishery. Under the Convention there is extensive research on marine mammals including studies on abundance, biology, and behavior and ways to reduce incidental take. For example, this year at least 19 INPFC marine mammal papers were presented at the March INPFC Scientific Subcommittee on the Ad Hoc Committee on Marine Mammals in Tokyo.

The incidental take under the permit has been well below the quota. The fleet's estimated take under the permit for 1985 is 2,423. The nets with improved gear required under the permit (*i.e.*, hollow tube monofilament) had a take rate of 0.395–0.396 in comparison with 0.497 in standard nets. The mothership fishery's estimated 1985 take in all areas was 2,747. (In addition, Japan has estimated a total take in the landbased fishery of 781 for 1985.)

Research is continuing. In 1985, field research was conducted to monitor the incidental take, estimate populations, and conduct biological studies, and acoustic studies. Laboratory analyses were conducted concerning incidental take, abundance estimates, biological parameters, and modeling. Japan continued to conduct a research program for reducing Dall's porpoise mortality rates and for estimating the abundance of Dall's porpoise. As stated in the NOAA Final Action Plan for 1985 (p. 14), this included:

(1) Continuation of an analysis of air tube threads in gillnets used on the catchboats.

(2) Continued research on acoustic sound generators.

(3) A "dedicated vessel" to conduct studies on Dall's porpoise.

(4) Biological research on Dall's porpoise, which could lead to reductions in mortality rates.

(5) Continued sighting survey for estimating abundance of Dall's porpoise.

Research plans are currently under way for 1986.

C. Unintended, unavoidable interception of salmon

The topic of the unintended, unavoidable interception of salmon of North American origin has been a subject of current interest.

This interception has been reduced to an insignificant level by the renegotiation of the Convention regime in 1978, as discussed previously in this statement, and by additional voluntary restrictions undertaken by Japan. For example, Japan in 1981 took voluntary measures to limit the catch of chinook salmon by the Japanese mothership salmon fishery up to 330,000 fish for the 3-year period of 1981–83 and up to 110,000 fish with an allowance of 10 percent per year. As a result of these voluntary measures, the catch of chinook salmon by the Japanese mothership salmon fishery amounted to 281,000 fish over the 1981–83 period, and to 87,000, 107,000, and 87,000 fish respectively for each of these years. In addition, Japan announced that it would limit the catch of chinook salmon up to 300,000 fish for the 3-year period of 1984–86, and up to the level of 100,000 fish with an allowance of its 10 percent per year. One-third of this total fish would be caught in the Bering Sea outside the United States FCZ.

It would be extremely burdensome for the Japanese further to reduce their incidental interception of chinook of North American origin since it would severely reduce its catch of Asian-origin salmon.

In any event, the result of these various measures is that this interception of salmon of North American origin is at an insignificant level. The number of chinook salmon of both Asian and North American origin taken by the Japanese highseas salmon fishery only amounts to approximately one percent of its total catch. Chinook salmon returns to Alaskan origin in recent years are large and have been increasing.

In addition, this is the sixth consecutive year that Alaska's commercial salmon harvest has exceeded 100,000,000 fish. In 1984, Alaska's commercial fishermen took a record 135,000,000 salmon. And the Alaska Department of Fish and Game has just announced that 136,800,000 salmon have been caught so far this year—a new record. Even under the United States estimate (which we believe is an overestimate), the Japanese incidental catch of the North American salmon is a mere .4 percent of the total run of North American salmon to Alaskan rivers.

In this context, we question the reasonableness of requesting Japanese fishermen to halt entirely the small amount of catch of U.S. origin salmon that inevitably occurs in the Japanese fisheries for Asian-origin salmon.

Furthermore, it should be emphasized that Japan is a major customer of Alaska with respect to marine products, including salmon. As shown in Appendix A[1] to this statement, in 1984 Alaska exported $287 million in marine products to all foreign countries; of this amount, 94.1 percent was exported to Japan. And, as shown in Appendix B, a very high portion of Alaska's total marine landings are exported to Japan.

Let me very briefly address a 1984 study by Katherine Meyers et al. (hereinafter "Meyers report") suggesting that the small number of chinook incidentally taken by the Japanese is made up of a higher portion of North American-origin fish than indicated in prior studies. In addition, the Meyers report suggests that more than half of these North American-origin chinook incidentally taken by the Japanese in the North Pacific (and not including the Bering Sea) is of central Alaskan-origin rather than of western Alaskan origin.

In this regard, the Meyers report is contrary to prior scientific studies on the issue such as the 1983 study by Knudsen et al. The Meyers report's results are substantially different from those produced in tagging studies. There are substantial methodological problems with the Meyers report, which are outlined in Appendix C to this testimony. (Appendix C also sets forth problems with respect to scale analysis of coho salmon.)

Further work on the issue is clearly warranted in the light of these evident problems with the Meyers report. The INPFC is moving as expeditiously as science will permit to resolve the questions. For example, Japan has proceeded to reexamine the Asian "standard" that was used in the Meyers report. It has done so by adding scale samples of chinook salmon caught by a Japanese research vessel. The scale patterns in those obtained by research vessels were significantly different from those obtained in the two rivers used in the Meyers report. A report to be submitted to the INPFC this fall indicates that there are obvious limits to classifying the continent of origin by scale pattern analysis methodology and that for this reason, in its current stage of development, that methodology should not be relied upon for management decisions.

Caution with respect to the Meyers report is warranted by the very fact that its conclusions are so contrary to other scientific understanding on the issue. A somewhat similar situation comes to mind. In rulemaking proceedings under the Marine Mammal Protection Act, NOAA had determined that a major stock, the northern offshore spotted, was above the lower boundary of its optimum sustainable population and could therefore be taken. However, in 1979 NOAA issued a report strongly indicating that the stock was actually below the lower boundary of OSP, was therefore depleted, and could not be taken. After the matter was more carefully reviewed, however, it was determined that the stock was actually not depleted.

D. Seabirds

Japan is conducting research on the status of seabirds incidentally caught. For example, since 1981 it had requested its mothership fisheries to keep records on incidental mortalities of birds on a species basis. The fleet has been provided with brochures on seabirds by species to aid in the identificatin of incidentally caught seabirds. Research vessels have been involved in a program of seabird stock assessment and surveys of incidental taking. The fleet is also testing experimental gear related to reduction of seabird mortality.

Beyond that, Japan has been addressing the matter through a program of international cooperation. It and the United States in 1982 held bilateral discussions relating to research and the exchange of scientific information.

The information that has been gathered so far indicates that the highest proportion (over 60 percent) of seabirds taken in the fishery are short-tailed shearwaters. These birds are of Southern-Hemisphere origin. Their population in Tasmanian rookeries has been estimated to be approximately 16 million. Indeed, this population supports a commercial and non-commercial harvest of nestlings on the nesting ground that ranges annually from 685,000 to 849,000 birds. Hundreds of thousands annually have been taken from the rookeries for food since the early 1800's with no indication of a population decline. The Japanese fishery is having no apparent adverse effect on the short-tailed shearwaters.

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[1] The appendices were not reproducible and are in the Committee files.

As for the other birds that are taken, it bears note that because the Japanese fishery is an offshore fishery, it is unlikely that a significant number of breeding birds is being taken. Thus, it is unlikely that the fishery is having an adverse effect on nesting colonies.

E. Conservation of the marine environment

The Japanese are doing their part to minimize debris in the ocean.

Let me first put this subject into context. It would be a mistake to address this subject in terms of particular fisheries in a particular location. The subject of marine debris is one that relates to numerous types of activities throughout the world including various kinds of fishing, non-fishing vessels, landbased activities, and development of the seabed.

As pointed out in the comments of the Government of Japan filed in this hearing, Japan has taken a number of actions to deal with the subject. It has, for example, joined the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Materials and has ratified the International Convention for the Prevention of Pollution for Ships. Japan is working through the North Pacific Fur Seal Commission on the subject of entanglement of fur seals. It participated in the November 1984 Workshop on marine debris. And it has acted to develop a variety of measures including recycling facilities, at-sea incinerators, and "sweeping" along coastlines.

Japan has acted vigorously to enact domestic legislation specifically addressing fisheries activities. It is illegal under Japanese law to discard nets. (Law Concerning Prevention of Ocean Contamination and Marine Disasters.) In any event, Japanese fishermen are highly motivated to avoid losing nets both for conservation reasons and practical reasons as well. Nets are very expensive, at least 26,000 to 33,000 yen per tan, and the Japanese fisherman suffers economic loss if a net is lost. When driftnets are set at sea they are equipped with a radio buoy for the purpose of recognition and are rarely lost. Nets are retrieved from the water, repaired to the extent possible, and retained on the catcherboats. Debris is disposed of in an on-board incinerator or brought back to port. To the extent that they cannot be repaired nets are recycled on shore into useful items such as spools, containers, and shoe heels. Nylon bags and bands, etc., are handled in the same way.

Finally, in the rare instance in which a net does manage to drift away, its shape becomes cylindrical and entanglement is therefore minimal.

II. SQUID FISHERY

The squid drift gillnet fishery of Japan is highly regulated.

In 1981 the government of Japan introduced a licensing system and established various regulatory measures relating to the fishery. The restrictions are designed with at least two principles in mind. The first is to control the number of vessels in the fishery so that they do not increase above the number in August 1981.

The second is to impose various area and season limitations to avoid the taking of salmonids. (See Appendix D.) Scientists at the INPFC have recognized the scientific rationale for these restrictions. The distribution of salmonids does not extend to the fishing grounds of the squid driftnet fishery. See INPFC Document No. 2674. (Salmon is a cold-water fish and squid is a warm-water fish.) The regulations specifically prohibit the catching of salmon and trout. They also require the fishermen to submit a report on catch and operations to the Minister of Agriculture, Forestry, and Fisheries at the end of each fishing trip. This information has been supplied to the INPFC.

The regulations have the desired effect of avoiding the incidental catch of salmon by the squid driftnet fishery. There has been no report or other evidence of incidental catch of salmon and trout during the period of August 1, 1981, when the licensing system was introduced into the squid driftnet fishery.

As stated in the comments of the Government of Japan, the squid fishery is making a major effort to collect data on marine mammals and seabirds incidentally taken in the fishery. Because its activities are conducted even farther out to sea than the salmon fishery, its take of seabirds is even lower. Finally, the rules and practices relating to avoidance of lost nets apply to this fishery.

III. MARLIN AND OTHER FISH GILLNET FISHERY

The marlin and other fish drift gillnet fishery is also highly regulated.

The fishery started more than 100 years ago, namely, a bluefin tuna gillnet fishery in the 1840's. Species in its catch currently include marlin, skipjack, yellowtail, shark, and pomfret.

The regulations governing the fishery include restrictions in order to avoid the catching of salmonids. (See Appendix E.) They also specifically prohibit the catching of salmon and trout. In addition, the mesh size used in this fishery is quite large (170 to 180 mm), thus making entanglement of salmon even less likely.

As with the other fisheries, data is being collected on incidentally-taken marine mammals and seabirds. In addition, the rules and practices for the avoidance of lost nets, as previously discussed, also apply to this fishery.

I will be happy to address any questions you may have.

Senator **Stevens**. Our next panel is Representative Johne Binkley of the Alaska State Legislature, from Bethel, AK; Mr. James O. Campbell, the chairman of the North Pacific Fishery Management Council; and Mr. Chuck Meacham, the Alaska Department of Fish and Game.

Good morning, gentlemen.

STATEMENTS OF JOHNE BINKLEY, ALASKA STATE REPRESENTATIVE; JAMES O. CAMPBELL, CHAIRMAN, NORTH PACIFIC FISHERY MANAGEMENT COUNCIL; AND CHUCK MEACHAM, ALASKA DEPARTMENT OF FISH AND GAME

Mr. **Binkley**. Thank you, Mr. Chairman. Good morning. I certainly appreciate Senators from Alaska holding this hearing here and allowing us to come before you and present some of the problems that we have out in western Alaska. I do have a written statement that I would like to submit for the record, and I will keep my remarks as brief as possible here this morning.

As was stated, I am in the Alaska State House of Representatives, and I represent people in the Yukon-Kuskokwin Delta. I live in the town of Bethel, which is located on the Kuskokwin River. I am here today on behalf of those people that I represent to request action from this committee to force a halt to what I consider to be illegal action. I am certainly not a biologist or by any means an expert on fish migration, but I do have faith in the data and the conclusions that the American scientific community has drawn, and that is, substantial numbers of Alaskan salmon are now being taken on the high seas primarily by the Japanese.

This year for the first time since its inception there was no directed commercial harvest of chum salmon on the Kuskokwin River. Even with the drastic measure that the Alaska Department of Fish and Game took, the amount of fish that made it back to spawn this year was dangerously low. The culture and the history of the people of the Yukon and Kuskokwin Rivers are intimately tied to salmon. Their survival throughout the generations of time has greatly depended upon the help of the salmon stocks on these rivers. It is a mainstay in their subsistence and commercial economy. It will continue to be the mainstay hopefully for generations to come. The record shows that the people on these rivers earn some of the lowest per capita income in the country. Average annual income for this year on the Kuskokwin River by commercial fishermen was about $4,000, pretty small if you consider they may have a family of five or more to support, but this meager income is vitally important in helping to maintain their subsistence way of life. It takes cash to buy the necessary tools, fuel, and equipment that it takes to harvest the subsistence food, and it takes cash to heat their homes. As you can see, the loss of salmon is of vital concern to the people of western Alaska, but this is an issue that is not confined to western Alaska.

In the last legislative session my colleague from the city of Haines in Alaska, Representative Gall and I introduced a resolution in the State house of representatives calling for an end to the interception of our salmon on the high seas. This was passed and signed by the Governor with overwhelming statewide support. This is an issue that every Alaskan can understand and support. I think when made aware of it, every citizen of the United States will understand and support our position.

Simply stated, the Japanese are stealing food from the mouths of our subsistence fishermen and cash from the pockets of our commercial fishermen. This is no less than piracy on the high seas. And I think that as this issue is brought to the attention of the American people, that they will demand that Congress take unilateral action to put an end to this crime that now exists.

Mr. Chairman, I have traveled literally thousands of miles to get here to Washington, DC, and to plead my case before you today. I am disappointed that although invited, no foreign government officials have showed up here today to address this issue. This, coupled with the fact that they have refused to even recognize our right to our own fish in recent negotiations leads me to believe that the Japanese simply do not think that the State of Alaska or the U.S. Congress are going to take action on this issue.

As you know, Mr. Chairman, our State is rich with natural resources, and we wish to develop trade relationships for those resources with countries of the Pacific Rim. At the State level, I plan to introduce legislation that would mandate State trade policies that include interception of Alaskan fish as a threshold to any development of trade with foreign governments.

At the Federal level, I would request that this committee consider similar legislation in the same form as the Pelly amendment to restrict trade with any country that does not adhere to the anadromous fish policy and intercepts at our North American salmon stocks, that Congress also through legislation direct the State Department to establish a United States-Soviet commission to cooperatively manage the marine resources in the Bering Sea, and that as a part of the Magnuson Reauthorization Act any country that intercepts our salmon be completely eliminated from any allocations of American bottom fish.

Some of these measures may seem extreme, Mr. Chairman. We must demonstrate to the foreign governments that we are serious about protecting our fish and our fishermen. Again, I appreciate the opportunity to come before you, and thank you for this time.

[The statement follows:]

STATEMENT OF JOHNE BINKLEY, ALASKA STATE REPRESENTATIVE

Thank you Mr. Chairman for allowing my testimony into the record of the committee. My name is Johne Binkley, Alaska State Representative for the Yukon-Kuskokwim River Delta in Southwestern Alaska. I would like to talk to you about the current situation the people on the Yukon and Kuskokwim Rivers are facing, and what the prospects are for their future if nothing is done to address the severe problems facing them.

I am grateful that this committee has the task of gathering information related to the impacts resulting from the pelagic drift net fisheries on the North Pacific Ocean. It is my hope that Congress can assist us in attempting to mitigate the current adverse impacts that are the result of these fisheries. The continued wastefulness of high seas interception of immature salmon, the resultant high drop-out rates, catches of non-targeted species such as marine mammals and pelagic feeding waterbirds, all of which are essential for the subsistence well-being of the people of Southwestern Alaska, must be stopped.

The culture and history of the people of the Yukon and Kuskokwim Rivers; the Yupik Eskimo, Inupiat Eskimo and Athabascan Indian, are intimately tied to the salmon. Their survival throughout the generations of time has greatly depended upon the health of the salmon stocks on these rivers. It is a mainstay in their subsistence and commercial economy. It will continue to be the mainstay, hopefully, for generations to come. The record shows that the people on these rivers earn some of the lowest per capita income in the country. Average annual income for the last several years on the Kuskokwim for a commercial fisherman is about $4,500. Pretty small when you consider he may have a family of five or more. And smaller still when you consider that he has an extended family unit of close relatives; aunts, uncles and cousins to share the benefits of his income. This meager income is vitally important in helping to maintain their subsistence way of life. It takes cash to buy the necessary tools, fuel and equipment that are used to assist in the subsistence harvest of food. And these costs are not cheap. Energy costs and the costs of other goods and services are some of the highest in the nation. A subsistence hunter may have to pay upwards of $2.00 a gallon for gasoline to power his outboard motorboat that is used so extensively during the spring, summer and fall months of the year.

As you know, the State of Alaska's oil revenues are declining. Even small reductions in the per barrel dollar value of crude oil greatly impacts our revenues. As we approach the 1990's when our Prudhoe Bay oil production declines, the reduction in revenues will force us to take measures to avert adverse impacts to our people. Alaskans are very dependent upon the delivery of services that the state provides, and in its contribution to the economy of Alaska. This situation requires that we implement innovative and effective measures to maintain delivery of services and the economy that Alaskans depend upon. This challenge is one that we are working on now. It is one that requires your help. The issue that you are addressing today is a critical issue that impacts a very significant part of our way of life and economy. How effective we are in the management of the issue to avert economic disaster depends upon the cooperation we receive from you and others that are in a position to help shape our future. People of the Yukon and Kuskokwim Rivers are experiencing a period of major changes to their culture and their future. It was not so long ago that our people in this region were relatively untouched by outside economic forces. Now, their very way of life and culture are faced with difficult and complex problems and issues. They have to travel far and wide to educate others about their culture and history, about their present subsistence lifestyle and their commercial economy that is so dependent upon the salmon and other marine resources. Hopefully, they will be given their due consideration, and that positive decisions will be made that supports and seeks a resolution to their concerns.

The population of the Yukon and Kuskokwim River Delta is increasing. And the resulting demand upon goods and services is increasing. This increase requires a healthy economy to help support the costs of maintaining their subsistence way of life, and the costs of the goods and services that make up the economy of the delta. More importantly, this requires that the resources that support the economy are managed adequately to ensure their continuation as renewable resources.

As stated before, the salmon industry makes up the major part of the subsistence and commercial economy of the Yukon-Kuskokwim River Delta. The total economic value or ex-vessel value of commercially caught salmon on the delta this year was $10,265,913, about $2,200,000 less than last year. Of this, the 153 fishermen in the Upper Yukon earned $874,300 for an average per fisherman of $5,714. The 666 fishermen on the Lower Yukon earned $6,138,002 for an average of $9,216 per fisherman. On the Kuskokwim River, the 781 fishermen earned $3,253,611 for an average of $4,165 per fisherman. Despite the low average income of the fishermen, the multiplier effect of the fishing income makes a significant contribution to the local economy. This amount, as small as it may seem, is vital to the health of the Yukon-Kuskokwim River Delta economy. The graphs[1] accompanying this testimony show a downward trend or movement in the numbers of commercially caught salmon, such as the chum species. The reductions in numbers of chum salmon were so low that for the first time in 25 years there was no commercial fishery directed to the chum salmon species on the Kuskokwim River. Similarly on the Yukon River, an early closure of the commercial fall chum season was imposed, and closure of that fishery is being proposed for next year. Fishing income from the chum salmon is about $930,000 less than last year. The salmon species, a renewable resource, should not be returning to the delta in increasingly small numbers. The conservation of the salmon species is critical not only to the health of the stocks themselves but to the subsistence and economic survivial of the people on the delta.

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[1] The graphs were not reproducible and are in the Committee files.

The commercial salmon interception industry on the high seas has been established for 30 years or more. But this is a relatively short period of time compared to the thousands of years the people on the Yukon and Kuskokwim River Delta have subsisted on the salmon. The continual growth of the high seas salmon interception industry has increaed the impact to the subsistence and commercial salmon industry on these rivers throughout the years. The people on these rivers have had to tolerate the abuses to their subsistence and commercial economy since the interceptions began. Village people set aside lands and water for future conservation with restrictions on development. We have to restore and improve the health of these vital salmon stocks to help our economy meet the demands of maintaining our livelihood. If these interceptions are allowed to continue by both foreign and American fleets on the high seas, the people on these rivers will suffer severe hardships. It is very difficult to maintain a subsistence way of life and a commercial economy without a resource such as the salmon. There are simply no other viable alternatives. The solution to this quandary is effective renewable resource management to maintian the health of these salmon stocks.

Included with this issue is the need for maintaining new and developing fisheries. Very recently, the State of Alaska allowed the opening of a commerical herring and halibut fishery for the very first time in the Nelson and Nunivak Island area in Southwestern Alaska. This fishery provides some meaningful income for the first time for people of the area. Other commerical gill-net fisheries such as the crab, pacific cod, shell fish and other bottom fish in Alaskan and U.S. waters contribute a significant amount of income to Alaska's economy. Because of the demands placed upon our declining revenues, the opportunity to improve the fisheries in Southwest Alaska has to be maintained. The contributions made by established fisheries should not be threatened by interception by fleets on the high seas. It has to be recognized that these species are fully utilized and should be treated that way.

The United States has to implement strong measures to help us protect our marine resources. To help us to restore and maintain our lifestyle and livelihood these measures have to take into consideration our need to exist as a subsistence and commerical economy wholly dependent upon these marine resources. We do not look at only one aspect of the impacts to our fishery. That is why we are also addressing the impacts within our own state by Alaskan based fisheries, such as in the False Pass and Shumagin Island area on the Alaska Peninsula. Our own Board of Fisheries will consider measures to help us better manage the resource within our own waters. Recognize that besides that fishery, other fisheries heavily impact our people: the Japanese Mothership Fishery; the Japanese Landbased Fishery; Squid Fleets; Foreign Trawl Fleets; and, American Trawl Fleets. The numbers of interceptions of salmon by these fleets run into the millions. The steps taken to restore the fishery on the Yukon and Kuskokwim has to address all of these fisheries. I respectfully request you to take positive action on the recommendations that I and my colleagues from Alaska offer you.

RECOMMENDATIONS

Vigorously pursue negotiations that will lead to complete elimination of high seas interceptions of salmon of Alaska origin. This means complete elimination of interception by the: Japanese Mothership Fishery; Japanese Land Based Fishery; Squid Fleets; American Trawl Fisheries; and Foreign Trawl Fisheries.

Adopt amendments to the Magnuson Fishery Conservation and Management Act preventing nations that intercept Alaska-bound salmon on the high seas from receiving allocations to harvest groundfish in the United States' 200-mile fishery conservation zone.

Cut upper limits on take of herring, halibut, crab and salmon by American Trawlers, and if this is exceeded, to shut down the fishery.

Continue to prohibit the sale of herring, halibut, salmon and crabs caught by American Trawlers off-shore.

Seek 100 percent observer coverage on all American Trawlers off-shore.

Senator **STEVENS**. Thank you very much. I think this would be an appropriate time for us to go vote. So we will stand in recess.

[Recess.]

Senator **STEVENS**. Mr. Campbell, chairman of the North Pacific Fisheries Management Council. We are happy to have you here, Jim.

Mr. **CAMPBELL**. Thank you, Senator. We are grateful for the opportunity to appear before your committee to present testimony today regarding pelagic fisheries in the North Pacific. We, like you, are greatly concerned about the drastic impacts these fisheries have on salmon and steelhead of U.S. origin. We, like you, are also concerned about the effect on marine mammal sea birds, other fish, and the environment in general. Others will testify in detail on the adverse impacts these fisheries have on other marine life. I intend to focus on the impacts of U.S. stocks of salmon and steelhead from catches in the Japanese mothership and land-based salmon fleets and by the Taiwanese squid fishermen.

In 1980, the Japanese mothership salmon fleet caught 380,000 western Alaska and Yukon chinook salmon, a loss to that in-shore fishery of 12.5 million pounds, far in excess of the actual catch that year. Since then, it has been below 100,000 fish, but still approximately 20 percent of the total catch. As pointed out, this loss to high sea gill netters substantially reduces the earnings of western Alaska residents, many of whom are already at below the poverty line.

Recent investigations by the State of Alaska indicate interceptions by both the Japanese salmon fisheries of other than western Alaska salmon are much higher than previously thought. This is a particular concern to myself in the Cook Inlet area, where bitter fights are raised between sports and commercial fishermen over a few thousand Chinook salmon, yet the Japanese take many times that amount from the same stocks. Ending their take would greatly ease the current pressures on the sports fishermen.

Japanese interceptions of North American steelhead average 26,000 of those highly valued sport fish annually. That is 5 percent of all coast runs of North American steelhead. Considering dead loss from dropouts, the actual losses are probably twice that high. The high seas squid driftnet fisheries if conducted legitimately under the rules similar to those adopted by Japan may have little impact on salmon stocks, but they have only to move north a few miles to find abundant stocks of salmon.

Taiwanese squid gill net fishermen have done just that in the last 3 years, and taken substantial quantities of salmon. Perhaps even more alarming, as Senator Stevens has pointed out, is the effect of the gill net gear used in this fishery on the environment. This derelict gear, surface monofilament gill nets, remains in the ocean environment for a long period of time and poses a real threat to marine life as well as vessel safety.

It is hard to believe the incredible magnitude of this fishery. The 534 Japanese boats liscensed for this fishery fished approximately 42,000 boat days in 1983. New information, as I understand from the survey taken by the Coast Guard indicates that the length of these nets now are more appropriately in around 21 to 23 miles in lengths.

The Taiwanese are known to have over 100 boats fishing squid, and we think the Republic of Korea may now be approaching that number. Add to this the two fleets, both Japanese salmon fisheries and their gill net fishery for marlin and tuna, and the amount of pelagic gill net being used in the North Pacific increases enormously. These gill net fisheries range from the longitude of Cordova, AK, 4,000 miles west to the Soviet FCZ and stretch from 600 to 1,500 miles north and south. We find quite alarming the reports mentioned today about the just completed research by National Marine Fisheries Service and the Coast Guard aboard the cutter *Storis*.

We know from experience how difficult lost nets are to find at sea, yet in 20 days the *Storis* found nine substantial pieces of derelict gill net four of which contained dead fish and one a dead fur seal. There have been several instances recently off Alaska where fishing vessels have been completely immobilized by derelict foreign pelagic gill net.

We have been fortunate. No ships' lives have been lost, but in bad weather it is very probable we will.

What can be done? We believe action is needed in four areas. First, end all high seas interception of North American salmon by the Japanese. Second, stop pirating of salmon on the high seas such as those by Taiwan since 1983. Third, work with all the North Pacific countries to determine the effects of pelagic gill net fisheries on our shared ocean environment. We must insist the countries using this gear share data and that they monitor their fisheries closely. I am not sure nor have I been told that in the agreement with the Taiwanese, that they have agreed to even share this data or this information. Fourth, that we continue unilaterally to study the problem of lost and discarded fishing gear and other harmful debris in the ocean environment.

Our council has been active in instigating and funding derelict gear inventories, central reporting system for lost gear, study of net marked salmon, and our staff has participated in research cruises to determine the relationship as to squid and salmon stocks on the high seas. We have and will continue to work closely with the National Marine Fisheries and Marine Mammal Commission on these problems.

The special appropriation sponsored by this committee last year of $1 million to study these problems gave us a good start. It is imperative that funding continue until we understand the true dimension of these problems, and have found ways to resolve them.

In concluding, regulations to control the squid fisheries as adopted by Japan in 1981 and by Taiwan this year, if enforced, can greatly reduce the possibility of incidental salmon catches. It seems odd to me that just an hour before we came into this meeting the Taiwanese would finally come up with the regulations that they have been asked to provide for their squid fishery. We know that some infractions occur because our patrols have seen them as discussed today. We should encourage those governments to increase enforcement and their research on those fisheries. Failure of the governments of Japan and Taiwan to stop the harvest of North

American salmon by their high seas fleets has already influenced our cooperative fishery development program between the United States and the nations of Japan and Taiwan. It is going to continue to affect the North Pacific Fishery Management Council's recommendations on ground fish allocations for those nations in the U.S. exclusive economic zone off Alaska. Personally, I am somewhat disappointed in the bilateral meetings that have taken place. As you know, this is the third. The first two took place in about 2 to 3 days. I think that gives you some indication of the Japanese Government's feeling as to how serious this issue is. I guess the one now scheduled for Japan is for another 2 to 3 days. I think you get an idea of how serious they really take this. That is the end of my comments.

[The statement follows:]

STATEMENT OF JAMES O. CAMPBELL, CHAIRMAN, NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

Mr. Chairman, I am James O. Campbell, Chairman of the North Pacific Fishery Management Council. I am grateful for the opportunity to appear before your committee to present testimony regarding Japanese, Korean and Taiwanese pelagic driftnet fisheries in the North Pacific. Our Council has been greatly concerned about the drastic impacts these fisheries have, or could have, on salmon and steelhead of U.S. origin. We are also concerned about their effect on marine mammals, sea birds and other fish. We know there are losses in direct fishing operations and believe there may be substantial losses in lost or discarded gear.

The North Pacific Council has worked hard to eliminate the interception of U.S.-origin salmon and steelhead by the Japanese landbased and mothership salmon fleets and we're dedicated to continuing those efforts. We're also concerned about the high seas squid gillnet fisheries by Japan, Taiwan, and the Republic of Korea because we think they have the potential to damage U.S. salmon stocks and the ocean environment. While a legitimate squid fishery may catch few salmon and steelhead there is clear evidence that Taiwanese boats from that fishery have deliberately fished for salmon. There's also some evidence of heavy gear loss by the squid gillnet fleets. We don't know how long this gear—surface monofilament gillnets—remains in the ocean environment but we believe it poses a very real threat to marine life and vessel safety.

SALMON INTERCEPTIONS

Others testifying before you today will address in detail the adverse impacts these fisheries can have on other fish, marine mammals and sea birds. For this reason I will focus on the impacts on U.S.-origin salmon and steel-head, which are primarily from the Japanese salmon fleets. We know so little about the Japanese, South Korean and Taiwanese squid driftnet fisheries that I can only speculate on their effects.

In 1980 the Japanese mothership salmon fleet harvested approximately 380,000 immature Western Alaska and Yukon chinook salmon. The loss to the inshore fishery was probably between 7.7 and 12.5 million pounds—far in excess of our inshore catch in that area. Their take has since been cut to below 100,000 chinook annually but it still comprised 14% of the total Western Alaska runs from 1978 through 1983. Interceptions of this magnitude drastically effect the people of Western Alaska who are dependent upon fisheries for their livelihoods. The annual value of all salmon fisheries in that area is approximately $10 million and is the only cash income many of the residents have. Interceptions by high seas gillnetters can substantially reduce the earnings of Western Alaska residents, already at or below the poverty line.

Recent work by the Fisheries Research Institute for the State of Alaska demonstrated that salmon interceptions by both Japanese salmon fleets is much higher than previously thought. Between 1978–83 they caught from 200,000 to 700,000 chinook salmon a year, most originating from Southcentral Alaska. This is of particular concern in my home area of Cook Inlet where the commercial catch of chinook is severely restricted to preserve a sports fishery that catches approximately 20,000 fish a year. Bitter fights have raged there between sports and commercial fishermen over a few thousand chinook salmon and yet the Japanese, with impunity, take many times that amount from the same stocks the domestic fishermen are fighting over. If this interception did not take place we could probably ease many of the current restrictions on our commercial and sports fishermen.

From all available data it appears that Japanese interceptions of North American steelhead, valued so highly by sport fishermen, have been averaging 26,000 fish annually. These catches include steelhead stocks from Alaska to the Columbia River and both summer and winter run fish. They represent approximately 5% of all coastal runs of North American steelhead.

SQUID DRIFTNET FISHERIES

The high seas squid driftnet fisheries have the potential to take large numbers of North American salmon, though there is growing evidence that a legitimate fishery, working under rules similar to those adopted by Japan in 1981 for their fishery, will have little impact on salmon stocks. It's a simple matter, though, for boats in that fishery to move north a relatively few miles into areas where salmon are abundant. Taiwanese squid gillnet fishermen have done just that for the past three years and taken substantial quantities of salmon. The nets used in the salmon fishery are virtually identical to those used for squid. Both are of tough, longlasting synthetic monofilament mesh ranging in size from 115 to 120mm in the squid fishery and 120 to 130mm in the salmon fishery. Both float on the surface with the salmon nets about 6 meters deep (vertically) and the squid nets 10 meters deep. The monofilament used in the salmon fishery is slightly lighter than that used in the squid fishery, and, of course, squid fishermen use 18 to 19 miles of net every night while salmon fishermen use only nine. Perhaps even more alarming than the possibility of an illegal salmon take is the effect the incredible amount of gillnet gear used in the squid fishery may have on the environment and the creatures within it. We know virtually nothing about those effects at this time.

Let me demonstrate if I can the incredible magnitude of this fishery. Fishermen from Japan with 534 boats licensed for this fishery fished 41,980 boat days in 1983. Each boat fished between 18 and 19 miles of gillnet every night. The total amount of net they fished that year, if it had all been fished on the same night, would have been over 761,000 miles long. That is enough to reach three times from here to the moon and still have enough left over to wrap fives times around the earth.

In addition to the Japanese fishery, the Taiwanese are known to have over 100 boats fishing squid. We think the Republic of Korea may have as many as 80. Combine that with the well documented Japanese salmon fishery and it's apparent that there is an enormous amount of pelagic gillnet being used in the North Pacific. I have not mentioned the gillnet fishery for marlin and tuna by Japan, but it must be considered in the overall picture. We know enough about the salmon fishery to make a reasonable estimate of how much gear is lost, how many birds and mammals are caught, and have some perception of the effects this has on the environment. We know very little about the squid fishery and virtually nothing about its effects on the environment. We know that it catches creatures besides squid, including some marine mammals and birds. It also catches large quantities of other fish, little of which is utilized.

Nor are these fisheries restricted to a small part of the Pacific. They range almost 4,000 miles, from the longitude of Cordova, Alaska to Soviet FCZ in the west in a belt from 600 to 1,500 miles north and south.

We don't know how much gear is lost from the squid fisheries to become a floating hazard to man and beast, but we do find quite alarming the reports from a just-completed research trip by the National Marine Fisheries Service and the Coast Guard using the Cutter STORIS. They spent a month observing the activities of the squid fleets in the mid-Pacific. We know from experience how hard lost nets are to find at sea, yet in twenty days the STORIS found eight substantial pieces of lost pelagic gillnets, four of which contained dead fish and one a dead fur seal. That's a very small sample, of course, and I don't think we can conclude anything from it except that we need to know a lot more about these fisheries and their effect on the environment.

These lost nets create a real hazard for our own fishing industry when they get entangled in a ship's propeller. There have been several instances in the past three years off Alaska where fishing vessels have been completely immobilized by bunches of lost foreign pelagic gillnets and had to be towed to port. Fortunately we've had no loss of life as yet but if it happens in bad weather or on a lee shore it's very probable that we will. We are told by our fishermen that American boats in the albacore jig fisheries now carry diving gear as they expect to run into derelict gear on their mid-Pacific grounds and must have the means of cutting it out of the wheel.

WHAT CAN BE DONE

We believe action is needed in four areas.

(1) We should end all high seas interceptions of North American salmon. We must continue to negotiate with Japan to restructure their fishery to eliminate interceptions.

(2) We should work with all of the nations fishing in the North Pacific to stop piratical interceptions of salmon on the high seas. Activities such as those conducted by Taiwan in 1983, 1984, and probably in 1985 must end.

(3) We should work with all of the countries fishing pelagic gillnets in the North Pacific to develop a cooperative program of information and monitoring that will determine exactly what the effects of those fisheries are on the environment shared by all of us. We must insist that those countries share data and that they be monitored to hold interceptions of other than target species to an absolute minimum.

(4) That we continue unilaterally to study the problem of lost and discarded fishing gear and other harmful debris in the ocean environment.

The North Pacific Fishery Management Council has been active in these areas since its inception, sponsoring beach inventories, central reporting systems for lost gear and funding studies of net marked salmon and our Council staff members have participated in U.S./Japanese research cruises to explore the relationship between salmon and squid stocks. We have worked closely with the National Marine Fisheries Service and the Marine Mammal Commission on projects to identify the problem and find solutions. The special appropriation from Congress last year of $1 million was most valuable and we're starting to see returns from it already. We have worked closely with NMFS and the Marine Mammal Commission in planning the projects to use those funds and will continue that role in planning for future work. We hope that funding can be found to continue it.

CONCLUSION

Regulations to control the squid fishery, such as those adopted by Japan in 1981 and by Taiwan this year, can greatly reduce the possibility of incidental salmon catches if they are enforced. We realize that's difficult. The fishery stretches across thousands of miles of the high seas. We know that some infractions occur because our own patrols have seen them. We should encourage those governments to increase their monitoring of this fishery and to increase their research on how those fisheries affect the environment. Taiwan has said they will cooperate with the U.S. in data exchanges and observer programs. We need some evidence of progress in that area before we believe they are serious about their regulations.

Failure of the Governments of Japan and Taiwan to stop the harvest of North American salmon by their high seas fleets will influence all cooperative fishery development programs between the United States and those two governments that fall within the jurisdiction of our Council as well as our recommendations on groundfish allocations to those nations in the United States Exclusive Economic Zone off Alaska.

Senator **STEVENS**. Thank you very much.

We will be back to you with questions.

Mr. Meacham.

Mr. **MEACHAM**. My name is Charles P. Meacham. I am a research supervisor with the Alaska Department of Fish and Game. I am here today speaking in behalf of the Governor of Alaska, Bill Sheffield. You have a copy of the Governor's speech, but I would like to highlight a few of the more salient points within it.

While there are a number of high seas gillnet fisheries, the ones viewed most detrimental to Alaska are the mothership and land-based directed salmon fisheries. These fisheries, since 1980, have intercepted between one and two million salmon each year. These fish are valued at $20 to $50 million, and that is based on the price paid to the fishermen. This represents a very serious loss of fishing opportunity to people in Alaska.

One of the most serious problems is within western Alaska, as you have heard earlier. In this particular area, the fisherman's average annual income is about $5,000, and indeed, many families live there at poverty level. In addition, there is a strong dependence on subsistence use of salmon, so when these salmon are taken on the high seas, it creates serious problems, especially to those people in the Arctic Yukon-Kuskokwim area.

You have heard testimony that Alaska salmon harvests are at all-time record highs. That in part we feel is due to adjustments made in the high seas fishery in 1978. Further adjustments, however, are necessary because the interception levels still remain too high. Even with the record catches of salmon that we have, there are areas of Alaska—and again, western Alaska seems particularly hard hit—that are not participating to the same degree in these record level catches. It is a serious problem for those folks.

Alaskans have been working very diligently for many years, 33 years through INPFC, to try and eliminate high seas interceptions. While the INPFC has been a relatively effective group in terms of coordinating research activities relating to the problem, unfortunately, as an agency it has been much less effective in eliminating interceptions because those continue. They continue at a level of 1 to 2 million fish per year.

People in Alaska fail to understand the rationale for this high seas fishery and the interceptions associated with it. In our view, it is a very illogical fishery. First of all, hatchery production has increased now to approximately 30 million salmon per year in Japan. This is a recent phenomenon. In our opinion, there is no reason why these salmon cannot be taken in shore, much closer to their rivers and hatcheries of origin.

At present, the Japanese high seas fishery is regulated through not only INPFC but also through an agreement with the U.S.S.R. Through the U.S.S.R. agreement, Japan is assessed a fisheries cooperation fee. That fee amounts to 4.2 billion yen, or about $18 million, depending on the exchange rate. That amounts to between 20 and 25 cents per pound to take those fish on the high seas.

An additional problem faced by Alaskans is that in the mothership fishery, most of the harvest is taken within the United States Fisheries Conservation Zone. We do not understand how the fishery can be allowed to exist paying those kinds of fees to the U.S.S.R. for Asian fish and yet taking them, along with our fish, within our 200-mile zone.

Yield loss associated with taking immature salmon on the high seas is severe. The salmon taken out there tend to be immature. There is a very significant dropout rate, as you have heard. The yield losses calculated by scientists range from about 3 to 6 pounds of fish that would potentially be available inshore for each pound of salmon taken on the high seas. One species that demonstrates this is chinook salmon. On the high seas as immatures, they average about 7 pounds. In inshore fisheries as mature fish, their average weight is closer to 20 pounds. It is a very wasteful situation.

Alaska's position is that while we do not understand the economic justification or necessity to harvest Asian salmon on the high seas, if Japan wishes to do so, that is their business. However, we just cannot tolerate the interception of 1 million to 2 million salmon per year that originate in the United States. That is the problem we face.

There was some mention earlier regarding marking of gillnets, marking of buoys and so forth. Within the State of Alaska there are a number of regulations whereby fishermen are required to mark the corks on their gillnets. Marking of the buoys at the terminal ends is generally insufficient, but marking of corks at uniform intervals along the net would serve to identify it very, very well.

Also, there was a comment regarding the sea bird harvests by these nets. In a meeting in Alaska 11 days ago, a marine mammal scientist presented a table. It is entitled "Total Estimated Mortality of Sea Birds in the U.S. FCZ by Year: 1981-84." The average take of marine sea birds is approximately 125,000 within the U.S. FCZ according to this paper. During these 4 years the take of tufted puffin has been as high as 53,000. Alaskans as well view this as a serious problem.

That concludes my testimony.

Senator **Stevens**. Thank you very much.

John, can you tell us, we had a series of closures by the Alaska Department of Fish and Game in your area in the Northwest this year.

What has been the impact of those closures on your people there who live in that subsistence economy?

Mr. **Binkley**. Well, it is very substantial, Mr. Chairman. I believe the total dollar value of the fishery in 1984 was about $5.8 million. The total value, exvessel value of the fishery this year was about $3.2 million. There is approximately 781 fishermen on the Kuskokwim River, so as you divide that out, it comes out to about $4,100 per fisherman. That is a substantial decrease from years past, and although it does not seem like a lot of money, it is substantial to the people there. They do not have any other form of income. Fishing is the only economy that we have out there outside of government, and we certainly do not like to rely on the Government.

Of course, the State's position has been a general cutback in State spending, which has impacted the area, and this causes serious problems for the people out in our area.

Senator **Stevens**. Well, you represent them very well. We are delighted to have you come so far. I know that you have been working hard on it in the State legislature.

Let me ask Jim a question.

Mr. Campbell, the Council recently, in effect—I read the statement you issued—sort of gave a warning statement about next year's allocations.

Mr. **Campbell**. Right.

Senator **Stevens**. Would you like to explain that here for the record, what your rationale was in issuing the statement that indicated that you were going to—there was going to be some linkage between allocations, your next allocation recommendations for the bottom fishery and the problems we are discussing today?

Mr. **Campbell**. Well, that is absolutely correct, Senator, and as you know, we can only make recommendations to the State Department as to allocations, but if I can speak for the Council, which I believe I can in this issue because we are certainly on record with letters to the Secretary stating our position and whether it is, I think, whether the act says it or not, that is the way we feel as Alaskans, and we will definitely take a look at our recommendations as to the allocation to foreign nations next year that have not, and in particular, Japan, in these meetings that are coming up in the bilateral, to continue in the manner in which they have, to not place the emphasis and importance on it that we do.

Senator STEVENS. Do you have any estimate of the total number of salmon that have been intercepted by the driftnet fleets? Have your people been presented any such information?

Mr. CAMPBELL. You are talking about the driftnet fleet? In 1980 we have the figure of interceptions, the State of Alaska, on the western Alaska salmon, other than western Alaska salmon, they caught 200,000 to 700,000 chinook a year between 1978 to 1983.

Senator STEVENS. You want to have some sort of a program to monitor these fleets and to provide some additional information from them?

Have you thought about how that would be financed, that program?

Mr. CAMPBELL. Well, certainly with the amount of funds that are available to the United States in fisheries matters, I cannot see any way that we are going to fund it. I think that is a key, is the sharing of this information and also the enforcement. If these things are not enforced, I do not think that we are going to gain by them at all. Certainly the Taiwanese proved that in the last few years.

Senator STEVENS. Mr. Meacham, we thank you for bringing the Governor's statement to us. We are I think in agreement concerning the efforts that need to be made to try to bring the protection of the North Pacific that the State seeks, and I think the Alaska congressional delegation seeks, but would you elaborate on your comments concerning Japan's other salmon fisheries, its hatchery production and the arrangements with the Soviet Union?

How important are those three items to these discussions today?

Mr. MEACHAM. I think all of them are very important. They are very relevant.

To begin with, relative to the hatchery production, that is a recent phenomenon. Not that long ago there were virtually no inshore returns to Japan. They had pretty well decimated those stocks. In recent years they have had tremendous production from their hatcheries which now results in inshore catches of approximately 30 million salmon. It is certainly the case that the high seas fisheries which harvest I think now between about 20 million and 25 million could be directed more on those stocks. There is no reason in our view that the Japanese cannot harvest salmon in the same manner as to other countries around the Pacific Ocean whereby they harvest them near shore.

Senator STEVENS. Where do their stocks migrate, their salmon, their hatchery production?

Mr. MEACHAM. Hatchery production migrates throughout the Bering Sea and North Pacific in considerable overlap with salmon of North American origin. So they are intermixed.

Senator STEVENS. Does any nation fish for the Japanese salmon hatchery production other than Japan?

Mr. MEACHAM. Absolutely not.

Senator STEVENS. Why does the State of Alaska not authorize the high seas fishery for Japanese stocks?

Mr. MEACHAM. There have been people that have indicated a real willingness to do so as a retaliatory measure, but frankly, the viewpoint of U.S. biologists are that it is an illogical way to harvest salmon. By waiting for those stocks to return inshore where you can control them, one can harvest by discrete stocks and realize an increase in poundage of three to six times what can be taken on the high seas. It is just not a logical way to proceed.

Senator STEVENS. And that is what they are doing to our stocks, is it not?

Mr. MEACHAM. You are absolutely correct, and that is why we view it as such a serious problem. We do not understand why it has continued. At the price that is paid to the Soviets of 20 to 25 cents a pound, it ought to be a very uneconomical fishery, and yet it continues.

Our feeling is that that fishery can well be pushed to near shore Asian areas, harvesting comparable numbers of salmon, and in fact, perhaps even increased poundage because they would have the yield loss factor reduced the nearer, of course, to shore that they were to fish.

Senator STEVENS. Do you have any evidence of fishing in the high seas for their own stocks?

Mr. MEACHAM. Not in the near offshore areas of Japan. The only take they have is in the middle of the ocean where their stocks are mixed to some degree with North American stocks.

Senator STEVENS. They only catch their stocks on the high seas incidentally to their attempt to catch our stocks, is that right?

Mr. MEACHAM. That is correct. There is also the very near coastal fisheries and fish taken at the hatcheries, but the high seas fisheries fishes on intermingling stocks of both American and Asian U.S.S.R. origin, including some of their own hatchery fish.

Senator STEVENS. Senator Murkowski.

Senator MURKOWSKI. Thank you very much.

Just a clarification. The purpose of the current Japanese Salmon treaty, is it simply to provide Japan and the United States an understanding that Japan takes Asiatic salmon on the high seas, or is it an acknowledgement that they are allowed to take some of North American anadromous salmon?

Mr. MEACHAM. The International North Pacific Fisheries Commission was established to allow them, if they so choose, to catch Asian salmon on the high seas. Through some of the scientific investigations that have been conducted, we found that the initial limits set for that fishery were ineffective in protecting United States salmon. They were not correctly set.

Senator MURKOWSKI. So in reality, then, it is fair to say it is strictly a treaty to protect their Asiatic salmon from our North American salmon.

Mr. MEACHAM. That would be correct.

Senator MURKOWSKI. Then why do they not fish—Senator Stevens touched on this—in fisheries off their immediate shore as we do for salmon?

Mr. MEACHAM. That would seem a much more logical way to proceed——

Senator MURKOWSKI. Well, when you ask them, what do they tell you?

Anybody can answer this.

Mr. MEACHAM. Their hesitancy, I think, is first because of their treaty with the U.S.S.R., and second that their own nearshore fishermen, fishing new returns to the hatcheries, would protest very adamantly as we do today regarding their harvest of our fish. But nevertheless, it is certainly inappropriate to go out on the high seas and harvest salmon when you are harvesting those of another nation when you have an opportunity to take those same fish in shore at a larger size within your own waters. That would be our recommendation.

Senator MURKOWSKI. Representative Binkley, I was out in Bethel, and you were kind enough to spend a portion of a day at a time in which there was a great deal of concern over the failing chum runs. There was also a concern expressed over the tremendous interception that occurred in the False Pass area by the large limit seiners that were out there operating, and in fact, corking the fish that would come into the Kuskokwim and adjacent areas.

Is that not part of the problem as well, that you have locally?

Mr. BINKLEY. You bet, Senator. That is very much a part of the problem, and that is one area that we are working on within the State jurisdiction of the board of fisheries to make some changes in that regard. That also is an intercept fishery. That is a question of allocation between Alaskan fishermen and——

Senator MURKOWSKI. Has the Department of Fish and Game been responsive to that concern?

Mr. BINKLEY. The Department of Fish and Game, my understanding is that they are supportive of eliminating the False Pass, Shumigan Islands interception. But it is an issue that the board of fisheries has to deal with.

Senator MURKOWSKI. Thank you.

I have a question of Commissioner Campbell.

What is your attitude towards the linking, the linkage premise, whereby we would enter into bottom fish allocations with the provision that we got certain concessions from the high seas fisheries, concerns that are expressed here today: A, if you have any incidental catch of any consequence, you basically lose your allocation, and those are the terms under which you get your allocation, and if you do not want to live by those terms, do not bother coming in and asking for an allocation.

Now, I have supported this concept, and a number of us feel it is a way to get there from here, but I do not understand why it is not pursued even though it has been expressed earlier. There is an apple and an orange syndrome here, but after all, that bottom fishery is within our 200 mile limit, and we have the authority to control it.

Mr. CAMPBELL. Well, Senator, it is a very legitimate question. And I am thankful for this hearing that is being held today because it is finally, or again, placing emphasis on the problem.

We look to the INPFC and perhaps that method of first attempting to do something with the Japanese on this issue. It has not been successful, at this time anyway, and maybe perhaps that is one of the few tools we have left. And certainly I favor using that if it is the only manner in which we can get a message across.

Senator **Murkowski**. Well, you are going into your third meeting now. Nothing has happened in the other two.

Mr. **Campbell**. That is correct.

Senator **Murkowski**. And it seems to me it is time to bring out your- if it is a secret weapon or your last resort, because it seems to me it would be quite effective.

Mr. **Campbell**. Well, the timing, as you know, is quite appropriate in that it would be the first of the year that we would be addressing this issue.

Senator **Murkowski**. I think Mr. Meacham had a response to my concern on the False Pass fishery.

Mr. **Meacham**. Yes. The board of fisheries does have a policy regarding salmon fisheries, and that policy is to promote discrete stock fisheries, and we are doing everything we can in that direction.

Senator **Murkowski**. That is really not being promoted if all those fish are being caught off False Pass though and not getting into the river, and you could devastate a resource because I do not suppose you know whether you are taking all the fish that are going back to spawn to one tributary or one river system or another.

Mr. **Meacham**. What you say is correct. That is the problem with any fishery that is not a discrete stock fishery. John is right, there is a proposal before the Alaska Board of Fisheries. There will be discussion at the board of fishery meeting which begins in November on the False Pass chum salmon interception problem.

Senator **Murkowski**. Thank you, Mr. Chairman.

Senator **Stevens**. Thank you very much, gentlemen. We look forward to visiting with you again as soon as possible. We appreciate your taking the time to come be with us.

Our next panel is Mr. Lee Goodman, assistant director, Bering Sea Fishermen's Association; Mr. Robert F. Morgan, President of the Pacific Seafood Processors Association, and Mr. Timothy Wapato, the executive director of the Columbia River Inter-Tribal Fish Commission.

STATEMENTS OF LEE GOODMAN, ASSISTANT DIRECTOR, BERING SEA FISHERMEN'S ASSOCIATION; ROBERT F. MORGAN, PRESIDENT, PACIFIC SEAFOOD PROCESSORS ASSOCIATION; AND TIMOTHY WAPATO, EXECUTIVE DIRECTOR, COLUMBIA RIVER INTERTRIBAL FISH COMMISSION AND TRIBAL COMMISSIONER, U.S. SECTION, PACIFIC SALMON COMMISSION

Mr. **Goodman**. Mr. Chairman, Senator Murkowski, Senator Gorton, I am speaking on behalf of the Bering Sea Fishermen's Association. We are an assistance and advocacy group. We represent about 1,500 western Alaskan fishermen along something approaching 10,000 miles of coastline between the Alaska Peninsula and the Kotzebue area.

I am representing also the Western Alaska Salmon Coalition. That is a newly formed organization of salmon fishermen and salmon processors from western Alaska. I am also speaking on behalf of myself. I am a commercial fisherman in western Alaska.

First I would like to thank our Senators Stevens and Murkowski for this opportunity. The fishermen of western Alaska realize that we do have friends here in Washington and that you are both very concerned about this issue.

To understand the damage that is being done by the Japanese you have to understand something about the western Alaskan fisheries. So I would like to leave the Japanese out of the discussion for a few minutes and talk about western Alaska.

Excluding Bristolo Bay, which is the largest western Alaskan fisheries, there are five western Alaskan gillnet fisheries. Most of them—excuse me, all of them are primarily native skiff-fishing operations. They fish out of small, about 18- to 26-foot boats. A few of the fishermen have newer welded aluminum boats, but for the most part they are old plywood open skiffs. The net is pulled into the boat by hand, the fish are picked out by hand. It is not a high tech operation.

This year the fishermen on the Upper Yukon averaged about $4,500 gross income. The Norton Sound fishermen averaged about $5,300. The Kuskokwim fishermen, as I think it was Representative Binkley pointed out, averaged about $4,000 seasonal, for the entire season income.

From these average earnings, subtract say 20 to 35 percent for the crew hand, subtract a few hundred dollars for the wear on the engine, subtract a few hundred dollars for the wear on the boat, add to that nets, gear, rain gear, anchors, buoys. The resulting net income is very low. Many times it is in the negative numbers. Even during a good fishing year it is not a large income.

You may wonder why the fishermen continue fishing. Western Alaska probably has one of the highests costs of living in the country. In many of these villages, which are not connected to any urban areas by road, most of them are not connected to each other by road. There are only a few jobs in the villages. There will be a few jobs at the corporation store, a few jobs at the city hall, maybe a few at the school, but for the most part, in the villages, even in the regional hubs such as Bethel, Nome and Kotzebue, the available work force far, far exceeds the available employment.

The fishermen, salmon fishermen of western Alaska fish because it is the only available employment. They also fish because they know how, because it is a lifestyle. They have been fishing for years and years.

The rivers are their supermarkets, and the salmon is their bread and butter. If you were invited into someone's home in western Alaska for lunch, you would probably eat dried fish, and it does not matter if it was February or August, you would eat dried fish. They will catch enough subsistence fish during the summer to last them throughout the year.

So it is really impossible to separate subsistence and commercial fishing. The commercial fishermen who breaks even, even though he does not have a net income, the money he has put into his boat, into his motor, into his fishing gear has supported his other livelihood, being subsistence fishing. It has brought in his groceries.

Commercial and subsistence fishing are linked, and they are both crucial to the economy and the lifestyle of western Alaska.

The coho salmon catch in Norton Sound this year was the lowest since 1978. It was less than half the previous 5-year average. The fall chum run on the Yukon has had biologists worried for several years. It is steadily declining. But the Kuskokwim, of course, was the big shock this year. The king season looked good. The fishermen caught about the average catch, but what even a lot of the fishermen still do not realize is that the escapement of kings was very low, in some areas being as much as 70 percent below Fish and Game objectives. And then there is the chum season. As Representative Binkley pointed out, it was a disaster. Senator Murkowski was good enough to come to Bethel during what should have been the chum season, and I think, Senator, you got a feel for the desperation there at that time. The catch of chums, even though there was not a directed chum fishery, through the king salmon season, there was a chum catch which amounted to about half of the season's average—excuse me, of the previous 5-year average.

While the fishermen will still looking forward to their chum season, Fish and Game had to close it down, and even with these drastic meaures, again, like the kings, escapement was up to 70 percent below Fish and Game's objective. Quite simply, there were not enough fish returning to the rivers.

It is not hard to figure out what happened. The Japanese driftnet fisheries take an average of 700,000 kings, reds and cohos a year—those figures are 1978 through 1984—of fish that should have been returning to western Alaska.

Senator STEVENS. Mr. Goodman, we are going to have to interrupt you here. We will start up again when we come back.

That is another vote. We have to excused ourselves. It is time to recess.

[Brief recess.]

Senator STEVENS. Gentlemen, I apologize. These things start around here like this. It is just one of those things.

Have you finished, Mr. Goodman? I did have to interrupt you, and I am sorry.

Mr. GOODMAN. Excuse me. No, I had not, and we certainly appreciate the importance of what is going on in the Senate at the moment.

I believe I was talking about figures of the Japanese take of western Alaskan salmon. The estimated take by the Japanese mothership and land-based driftnet fisheries of kings, reds, and cohos combined is 700,000. That is the western Alaskan portion of their take, and since about half the fish that are caught in their nets die and drop out before the net is brought on board, we can estimate that close to 1½ million salmon are being deprived—the western Alaskan fishermen are being deprived of close to 1½ million salmon by these Japanese fisheries.

These figures do not include chum salmon, and the statistics I have seen are that the king salmon catch is about 2 percent of the chum salmon catch. That is, they catch 50 times as many chums as kings. I do not have an estimate for what percentage of the chum salmon catch are western Alaskan fish, but if it is anything approaching the percentage of kings that are western Alaskan fish, the chum salmon the western Alaskan fishermen are being deprived of by these fisheries would be in the millions.

The Japanese fisheries are wasteful, the Japanese high seas drift net fisheries are wasteful because of the mortality dropout from the nets. They are inefficient because the fish they take on the high seas weigh approximately a third, as Mr. Meacham pointed out, of what they would weigh if they were taken by the in-shore fisheries, and they are illegal. In a recent speech, Governor Sheffield said "The diplomatic term for this catch of Alaskan origin salmon by foreign boats is 'interception.' I suspect our fishermen could easily come up with a boatload of much more colorful terms for it."

Well, I thought of this, and I came up with the same term that Representative Binkley came up with, piracy, according to Webster, robbery on the high seas.

The Magnuson Act states, as you have heard, that anadromous species such as salmon which originate in U.S. rivers and streams are considered U.S. fish even when they range outside of our FCZ. The Magnuson Act also states that it is unlawful for foreign fishermen to harvest fish the optimum yield of which may be fully harvested by U.S. fishermen. The Western Alaska Salmon Coalition, one of the groups I am representing, has recently brought suit against the Secretaries of Transportation, Commerce, and State, claiming that they have been negligent in enforcing these provisions of the Magnuson Act.

The Japanese gillnet fisheries are taking millions of dollars of revenue from an area of the United States which can least afford it. I am not a politician or a diplomat, and I do not fully understand the political or diplomatic implications of simply saying it is time to end this. The western Alaskan fisherman who did not cover expenses this year, who is afraid next year will be worse, who is afraid next year they will not have enough subsistence fish to feed their families, probably does not understand the diplomatic or political implications either, and thinks it is time to end this.

If the current negotiations do not resolve the problem, I see no reason not to try and resolve it through the bottom fish allocations, or more severe methods.

I would like to thank you for the opportunity to bring these problems before you.

That is the end of my prepared statement. If I could have another minute or two, I have some remarks on Mr. Hodges' testimony and a question Senator Murkowski had asked of Mr. Meacham.

Senator **STEVENS**. Go right ahead.

Mr. **GOODMAN**. Thank you.

I had a chance to thumb through Mr. Hodges' testimony while I was listening to the other testimonies. In it it said, that this fishery we are discussing is responsibile and well managed with respect to the conservation of marine resources. I think it has been pointed out that that is not the case. It is wasteful, it is an inefficient use of the resource. It is dangerous to not only our fisheries but marine mammals and birds.

Interception, his testimony states, is reduced to an insignificant level. The figures I have, if I could pull them out very quickly, which came out of a study done by the Fisheries Research Institute of the University of Washington, state that from the years 1978 to 1981, for the region of origin, in the Bering Sea, the region of origin for Asian fish—excuse me, the percentage of Asian fish of the Japanese take was 12 percent. Western Alaska constituted 75 percent, central Alaska 13 percent. In the North Pacific, Asian fish constituted only 25 percent of that take. Western Alaska was 25 percent, and central Alaska was 42 percent Those are not insignificant figures.

His testimony criticized the scientific method of this study. I have somewhat of a background in science, and I would certainly welcome an opportunity to argue that fact either with himself or their scientific advisers on this. I think their points were not good, the points on which they criticized the study.

You had discussed briefly the possibility of making gillnets biodegradable somehow. I hate to bring this up as a suggestion for the Japanese high seas fisheries because as far as I am concerned the fisheries are on the way out, we are not looking for ways to make them better; we are looking for ways to eliminate them, but as a point to emphasize the fact that the Japanese have not been looking at ways to mitigate this fishery, in a discussion last night with Mr. Eisenbud, he mentioned that in a talk with some chemical people, he had been told that they could at any time they wanted make the plastics that would degrade in any period of time specified. This technology has been around for years, and it is possible. The Japanese have not attempted to look into that.

And finally, regarding a question Senator Murkowki asked I believe of Mr. Meacham, why not fish for these fish off their own shores rather than the high seas as it is more efficient, they weigh more. Apparently I think, as Mr. Meacham pointed out, there is some disagreement within the Japanese community, and these high seas fisheries are not sanctioned industrywide in Japan, and in fact, these high seas driftnet fisheries are illegal inside Japan's fisheries zone. They fish in our waters with a fishing technique that they will not use in their own waters.

Thank you.

[The statement follows:]

STATEMENT OF LEE GOODMAN, BERING SEA FISHERMEN'S ASSOCIATION

I am Lee Goodman. I am here today to speak on behalf of the Bering Sea Fishermen's Association, the Western Alaska Salmon Coalition, and as a commercial fishermen.

Bering Sea Fishermen's Association is an assistance and advocacy organization representing fishermen from all over western Alaska—that region from the Alaska Peninsula to the Kotzebue area. We are involved in fisheries development, we provide technical assistance and educational programs throughout our region of interest, and we advocate for the fishermen of that area. Generally I am not involved in policy and political activities of BSFA. As the extension specialist I travel in western Alaska villages, working with the fishermen, trying to trouble shoot new fisheries, and help keep established fisheries running smoothly. Through this job I have had the opportunity to met fishermen from different areas of western Alaska and to get to know their problems and concerns. I have been a guest in many homes in western Alaska, and am lucky to consider many of the fishermen as friends.

The Western Alaska Salmon Coalition is a recently formed organization of commercial fishermen and salmon processing interests from western Alaska. The organization was founded—according to our articles of incorporation—"to represent the conservation and responsible harvest of western Alaska salmon; and to advocate for the perservation, mitigation, and enhancement of western Alaska salmon and their habitat." We accomplish this though education, testimony such as this, and through judicial intervention as I'll discuss later.

To understand the damage that is being done to fisheries in western Alaska, you have to understand the western Alaska salmon fishery, so please bear with me while I leave the Japanese out of the discussion for a few minutes and talk to you about fishing in the small western Alaska fisheries. There are six salmon fishing areas of western Alaska. Bristol Bay is the largest and most sophisticated, involving hundreds of fishermen and millions of fish. The remaining five fisheries (Kuskokwim, Upper Yukon, Lower Yukon, Norton Sound, and Kotzebue) are small, primarily native, set or drift gill-net fisheries. Fishermen set and pick up nets in small open skiffs ranging in size from about 18 to 26 feet. Depending on the area, fishermen may fish 300, 600, or 900 feet of gill-net. The net is pulled into the boat by hand and the fish are picked out one at a time. Some of the fishermen have new welded aluminum boats, but for the most part, they still use plywood skiffs. I know of no fishermen who use hydraulic power to pull in the salmon nets. These are small fisheries, and they do not provide enough income to justify larger, more expensive boats, nor would larger vessels be as efficient for these fisheries.

This year in Kotzebue, income for fishermen averaged about $11,000 for the season. In the lower Yukon, the average was about $9,000; Norton Sound averaged $5,300; Upper Yukon was $4,500 and Kuskokwim fishermen averaged just over $4,000 for the entire salmon season.

From these average earnings subtract 20 to 35 percent for the crew hand's pay, subtract several hundred dollars for gas and oil, and several hundred more for wear on the outboard motor (a $3,500 piece of equipment which may last 5 years). On top of that are boat repairs, nets, anchors, buoys, lines, rain gear, and engine parts. Once you do all of the subtracting, you may wonder why the fishermen bother fishing.

Western Alaska probaby has the highest cost of living of any area in the country. Villages are small and isolated from most urban areas, and in many cases from each other as well. As you could guess, there is almost no available employment in most areas of western Alaska. In a village of two hundred people for example, a few people work at the city office, another few at the village corporation office, a few more at the one or two stores, and maybe one or two positions at the school. That is all. Even in the regional hubs such as Bethel, Nome or Kotzebue, there is simply not enough employment for the number of eligible workers. Most western Alaska fishermen fish because it is the only job available and because they know how. The alternative to fishing's tenuous and often small income is no income. Most native fishermen have been fishing since childhood. They have eaten salmon and herring and cod and white fish all their lives. If you have lunch in someone's house in a village on the Yukon Kuskokwim Delta, you'll probably have dried salmon. You'll have dried salmon whether you go in August or February because the river is the grocery store and the fish is the staple. So even if a fisherman from Tuluksak makes a gross fishing income of only $5,000 and a net income of somewhere around $2,000, the commercial fishing has helped support his boat and motor and fishing gear which he uses to bring in his subsistence fish. So you see, commercial and subsistence fishing are linked, and both are crucial to the economy of western Alaska.

The coho (silver) salmon catch in Norton Sound this year was the lowest since 1978, and less than half their previous five year average. The fall chum run on the Yukon has had biologists worried for several years because of a trend of decreasing escapement. This summer's big shock—which gave impetus to a ground swell of opposition to the Japanese driftnet fleets—was the Kuskokwim fishery. The season started well for the fishermen. The king salmon catch was pretty good, but what even many fishermen never realized is that the king escapement was very low in the area, in some places as much as 70 percent below the Department of Fish and Game's objective. (As you know escapement refers to those fish which are not caught and successfully return to spawn). So despite a good catch, the total king run was poor. If the king run was poor, the chum run was devastating. This year's catch was only about half the previous five year average, and like the run, escapement was drastically below objective. There clearly were not enough fish returning to the river this year. The low escapement means there will probably not be enough fish returning when this year's crop return to spawn.

It is not hard to figure out what happened. The salmon that western Alaska fishermen are trying to catch are beleagured fish. Before our commercial and subsistence fishermen get a crack at them, there is a gauntlet of high seas fisheries the fish must survive. The Japanese mothership and land-based drift net fisheries, however, are the only ones which target salmon that are well known to be western Alaska stocks. The mothership and land based fleets together took a yearly average of about 100,000 western Alaska king salmon between 1978 and 1984. The average catch of coho and red salmon was about 300,000 fish each. Together there are 700,000 king, coho and red salmon harvested annually that should have been available to western Alaska fishermen. While these figures may be a fair representation of the western Alaska fish caught by the Japanese high seas gill-net fisheries, they underestimate the number of fish the Alaska fishermen were deprived of. It is estimated that about 50% of the fish ensnared in the gill-nets die and drop out of the net before it is picked. Double this figure of 700,000 and we see that the mothership and land-based fleets are depriving the Western Alaska fishermen of well over a million king, coho and red salmon annually. What about chum salmon? I do not have a figure for the percentage of chums caught which originated in western Alaska, but the total number of chums caught is about fifty times the total king catch by the Japanese. It should also be mentioned that it is not only western Alaska that is suffering from this high seas fishery. Many of the salmon in the catch originated in central Alaska. You have probably heard from commercial and recreational fishermen from that part of the State.

The Japanese high seas gill-net fisheries defy intelligent resource conservation and utilization. The fishery is wasteful—the high mortality drop-out wastes about 50 percent of the fish caught. The fishery is an inefficient use of the resource—the fish caught on the high seas weigh about a third of what they would weigh by the time they reach the coastal fisheries. Finally, the fishery is illegal. In a recent speech Governor Sheffield said, "The diplomatic term for this catch of Alaskan origin salmon by foreign boats is 'interception.' I suspect our fishermen could easily come up with a boat load of much more colorful terms for it." The term that comes to my mind is piracy.

The salmon in question are hatched in the rivers and streams of western Alaska and they are returning to the rivers and streams of western Alaska. They are not Japan's salmon. The Western Alaska Salmon coalition along with several other nonprofit roganizations and four fishermen recently brought suit in the U.S. District Court in Anchorage against the Secretaries of the Department of State, Commerce, and Transportation, alleging that the defendants "have authorized or otherwise permitted, foreign fishing for western Alaska salmon stocks. Such authorization is and actions are in excess of the statutory authority delegated the defendants by the Magnuson Fisheries Conservation Management Act and are void and of no effort." In the law suit, we point out that the Magnuson Act, which established the 200 mile Fishery Conservation Zone (FCZ), gives Congress exclusive jurisdication over all fishing within the FCZ, and over all fishing of U.S. origin anadromous fish throughout their migration route—even when it is outside the 200 mile zone. Further, the Magnuson Act prohibits foreign fishing for any fish species which is fully harvestable (to the extent of the harvestable surplus by U.S. fishermen). To repeat, the Japanese high seas mothership and land-based gill-net fisheries are an inefficient and wasteful use of the resource—and blantantly illegal.

Fisheries policy in Alaska gives priority in allocating fish to escapement to perpetuate a strong run. Second priority goes to the subsistence users. Commercial users get third priority. Well, the Japanese have jumped to the front of that line and taken enough fish that the effects were felt through Alaskan commercial and subsistence use, and escapement.

To harm the western Alaskan commercial fisheries and subsistence fisheries is to endanger not only a traditional way of life, but the economic health of the region. I think we can all agree that the residents of western Alaska, who are struggling for their economic survival, whose alternative to fishing is food stamps, and perhaps relocation, who have fished salmon in these rivers for millennia, deserve a higher priority with their government than the Japanese industrial fisheries have achieved.

Neither I nor most of the people I am representing are politicians. We are frustrated by the prolonged effort to study the situation or use lengthly diplomatic means. We do not know about the various economic and diplomatic implications of an immediate ban as opposed to a slow phase-out of high seas gill-netting. To western Alaska fishermen who did not cover their expenses this year and are afraid next year may be worse, to the fishermen who are afraid there will not be enough salmon next year for commerical or subsistence needs, it looks like the time to end the problem is now. We want the Japanese out of our fishery. Should the current negotiations fail to arrive at a settlement with a complete phase out of the high seas salmon fishery, then Congress should amend the Magnuson Act to direct the Departments of Commerce and State to reduce current allocations of bottom fish. Perhaps a 50-percent reduction for each year that a settlement is not achieved would force a solution. In no case, should these fisheries be permitted beyond 1989. Congress should also reconsider our nation's commitment to the IMPFC if the situation persists.

Thank you for the opportunity to present this testimony. I cannot tell you how important it is to the members of the Bering Sea Fishermen's Association and to the Coalition that Congress hear our story and act accordingly. I will be happy to answer any questions.

Senator **STEVENS** Thank you very much. We appreciate your presentation, Mr. Goodman.

Mr. **MORGAN**. Thank you, Mr. Chairman.

I am Robert F. Morgan, president of the Pacific Seafood Processors Association. The association greatly appreciates being asked to present its views on the subject of high seas driftnet fishing. This issue is of major economic and ecological importance, and we are glad that the committee is investigating the topic.

This process must lead to corrective measures in the near future.

I would like to take just a moment to discribe the membership of the Pacific Seafood Processors Association. The companies which comprise PSPA operate primarily in Washington and Alaska, and produce a wide variety of seafood products including salmon, crab, shrimp, and a number of botton fish species. Several members are also in the process of entering the surimi business.

When considered as a group, the members of PSPA produce approximately 85 percent of the seafood products which originate in the Northwest and Alaska. The purpose of the association is to provide a forum for communication among the members on matters of common concern, and to provide input to Federal, State, and Local decisionmakers on issues of interest to association members.

The extensive use of high seas driftnets by foreign fishing nations represents a serious threat to the fishery conservation and management efforts of the United States, and we agree with the committee that the situation should be thoroughly investigated. It has been estimated that each day during the peak fishing season in the North Pacific, over 20,000 miles of driftnet is set by three nations, Japan, Korea, and Taiwan. The principal species being targeted are salmon, squid, and marlin, and the various fishing seasons last from 40 to 70 days.

It is difficult for anyone to imagine 20,000 miles of netting being set in a day. In order to visualize what this really means, picture the entire 6,640 miles of coastline of the State of Alaska being enclosed by a wall of netting. Now picture it being enclosed a second and a third time. That is how much driftnet is being deployed each day.

Now, if all this fishing activity were being closely monitored and regulated, the problem caused by such massive amounts of fishing gear could be limited. Unfortunately, this is not the case. A good portion of this fishing is totally unregulated, and the majority is carried out without effective enforcement of whatever rules might be in place.

Because of this, we have little information about what the actual impacts of these fisheries are, not only on fish stocks, but also on a wide variety of marine life. Adding to this already serious problem is the fact that an estimated 600 miles of netting are lost or discarded at sea each year. Once again, to help visualize what this means, picture a continuous line of netting stretching from Washington DC, to Chicago. That is what these foreign nations are leaving strewn around the North Pacific each year.

The effects of this lost netting are insidious. The hundreds of pieces of netting which are lost continue to ghost fish until they are washed ashore. Conservative estimates have been made that the combination of actively fished driftnets and lost gear is killing several million salmon each year, which simply sink to the ocean floor where they rot.

The question of whether high seas driftnet fisheries are taking salmon legally or illegally is one question, but the fact that they are killing and wasting millions of fish is quite another.

It is worth noting that after many years of tough negotiations, the United States and Canada recently concluded the Pacific Salmon Treaty. This treaty requires sacrifices of both sides in order to conserve and rebuild certain depressed salmon stocks. If these sacrifices are to be of any value, we must make sure that millions of salmon do not continue to be lost in a destructive fishery, thereby undoing the progress expected from the treaty.

Another very serious danger posed by these massive amounts of netting being discarded at sea involve oceangoing vessels of all kinds. Numerous cases have been reported of netting fouling the propulsion gear of vessels, and in some cases leaving the ship dead in the water. Given the harsh conditions of the North Pacific, such an event could well be life threatening for the crew aboard such an unlucky vessel. This is yet another reason why this problem must be addressed quickly.

The last impact of high seas driftnet fisheries which I would like to mention is an economic impact, and it is of particular concern to the members of PSPA. The market for canned and frozen salmon is a world market, and the companies which belong to PSPA are major participants. We can say with great assurance that millions of salmon are being taken illegally in these high seas driftnet fisheries, and that this illegally caught salmon is showing up on the world market in competition with legally produced American salmon. The member companies of PSPA feel the bite of this illegal competition every day, and this is yet another reason why we contend that immediate steps must be taken to rein in this destructive activity.

There is another economic impact which is less obvious but still very damaging. This is the dropout rates for salmon which are lost during driftnet fishing operations. It has been estimated that perhaps millions of salmon become trapped in foreign driftnets, die and then fall to the ocean floor before their net is hauled in. This type of wastefulness also impact American user groups since it results in fewer salmon being available for everyone.

One step which could be taken to lessen the impacts of high seas driftnets is to require foreign fleets to meet the same regulatory standards as U.S. fishermen. For over a decade, American fishermen have been required to conduct fishing operations in a manner which minimized the taking of marine mammals and other nontarget marine life. The law has been successful in meeting its goal.

Unfortunately, we once again encounter a situation where Federal regulations which govern U.S. fishermen are not applied to the foreign fleets. For reasons of both ecology and simple fairness, this situation should be corrected.

Although we have a fairly good idea of the scope of the problem, we are faced with two questions: what is to be done, and what leverage do we have to achieve a solution?

The Pacific Seafood Processors Association feels that in light of the extremely destructive nature of high seas driftnet fisheries, they should be banned altogether, both inside and outside the Fishery Conservation Zone. Within the FCZ, this can be done through new laws or regulations. On the high seas it will have to be accomplished through negotiation. Such negotiations will be difficult, but they are essential.

As for the question of leverage to be used in persuading the foreign nations to cooperate, we feel that here are several options. First, Japan has extensive salmon fishing rights within the U.S. Fishery Conservation Zone. This fishing currently takes place under the authority of a legislatively approved marine mammal permit. This permit was granted on the condition that Japan implement new fishing methods which would sharply reduce the incidental kill of marine mammals. This permit must be renewed by the Commerce Department prior to the 1987 fishing season. It appears to us that the marine mammal permit hearing process to be conducted by the Commerce Department provides considerable leverage for imposing future restrictions on Japanese driftnet operations.

Using this leverage, we should be able to reach an agreement which will greatly reduce the incidental take of fish, marine mammals, and seabirds.

As far as Taiwan's high seas catch of salmon is concerned, considerable progress has already been made in moving the Taiwanese squid driftnet fishery to an area which will minimize its impact on North American salmon. And in this case, special thanks should go to Ambassador Wolfe who, working with northwestern Alaska congressional representatives was able to persuade Taiwan to restrict its fleet's operation.

Since the parties to the INPFC do not recognize that Taiwan has any right to take salmon whatsoever, this progress toward the objective of zero interceptions is most welcome.

In addition to the normal process of diplomacy, we should also like to suggest that other leverage be considered. For instance, the possibility of canceling governing international fishery agreements has been suggested. Another powerful deterrent to future interceptions would be imposition of the Pelly amendment to the Fishermen's Protective Act. Use of this sanction would prohibit the importation of fishery products into the United States from the nation it is imposed against. This would obvicusly be very effective against Japan, Korea, or Taiwan.

To summarize, PSPA members have witnessed the growth of foreign high seas driftnet fisheries with alarm. Their many negative effects must be realistically assessed and dealt with. We hope that the committee will consider what it hears today and use it as the basis of swift action to outlaw this destructive form of fishery. A cooperative effort by the Congress and the administration should be able to accomplish this difficult but much needed goal.

Thank you very much, and I am prepared to answer any questions.

Senator STEVENS. Mr. Wapato.

Mr. WAPATO. Thank you, Mr. Chairman.

My name is Tim Wapato. I am the executive director of the Columbia River Inter-Tribal Fish Commission. That commission is comprised of the four treaty Indian tribes with treaty fishing rights on the Columbia River. Those tribes are the Yakima Indian Nation in the State of Washington, the Warm Springs Tribe in Oregon, the Umatilla Tribe in Oregon and the Nez Perce Tribe, which is in Idaho. I am also testifying in my capacity as a representative of the U.S. section of the Pacific Salmon Commission, recently established under the Pacific Salmon Treaty with Canada.

I have a written statement which I would ask be entered into the record, and, in the interest of brevity, I will comment on some of the key parts of my statement.

We who fish in the rivers understand better than most fishermen, except probably the fishermen of western Alaska, the devastation that can be wreaked upon fisheries by ocean interceptions. In the Northwest, in river and in-shore fishermen have long suffered from very poor management schemes and regulatory practices.

There have been some positive, very bright spots in the recent past of Pacific Northwest fishery management. Moreover, we now see some very bright spots coastwide. In the Northwest we have the Fish and Wildlife Program of the Northwest Power Planning Act and the Salmon and Steelhead Conservation and Enhancement Act. We also have some very intensive ongoing negotiations between the Indian tribes and the various State agencies. The negotiations are on the verge of settling some very longstanding management issues, many of which have spilled over into this congressional arena in the past. We see very positive signs that we may be able to reach some long-term accords in the very near future.

Then, of course, the United States-Canada treaty entailed a series of very intense negotiations between the U.S parties: Alaska, Oregon, Washington, and the tribes. What we have seen so far from that effort is very positive. I think my optimism is shared by Don Collingsworth, who currently is the chairman of the U.S. section in the inaugural year of the commission, and the other commissioners.

We share the concerns that have been raised here that high seas driftnetting, particularly the land-based portion of it, is in a position to exploit any savings that might accrue or any enhancement activities that might occur under that United States-Canadian treaty. It is clear that Alaska and Canada both took some very substantial cuts in the harvest of the chinook. I am concerned that before the benefits accrue back to chinook rebuilding, they could be gobbled up in the high seas fisheries.

We, from my perspective with the tribes, also have some very serious concerns about the harvest of the steelhead in the high seas fisheries. The information and research data that we have is somewhat sketchy, but it definitely indicates that a substantial portion of Washington and Oregon origin steelhead stocks are harvested in the driftnet fisheries. We would urge this committee and Congress to continue their efforts, particularly supporting the National Marine Fisheries Service research efforts in those areas to obtain more data. We certainly support what we have heard: the sentiment of the committee to drastically curtail or do away with the high seas driftnet fisheries.

We are somewhat appalled when in the river we have fishermen who may be picked up for illegal fishing, which we support the enforcement efforts in the river. We have people who have been sentenced to 5 years Federal time for harvesting 200 or 100 fish, and when we hear some totals of fisheries in the amount of 700,000 to 1 million, which basically is not only going unenforced, but apparently no punitive attachment to that, we see it not only from the social and economic standpoint, but we see a great inequity in that type of system.

And then finally, on a last personal note, although our perspective on the driftnet is fundamentally from a fishery manager's standpoint, we cannot overlook the appalling and indiscriminate violence that those nets inflict upon the marine mammals and upon the seabirds. We think that killing is a waste; it is unconscionable, and it must be curtailed.

Mr. Chairman, that completes my comments, if there are any questions.

[The statement follows:]

STATEMENT OF S. TIMOTHY WAPATO, EXECUTIVE DIRECTOR, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION AND TRIBAL COMMISSIONER, U.S. SECTION, PACIFIC SALMON COMMISSION

Mr. Chairman, members of the committee, I am S. Timothy Wapato, executive director of the Columbia River Inter-Tribal Fish Commission and a commissioner of the U.S. Section of the Pacific Salmon Commission. On behalf of the four Columbia River treaty fishing tribes and the Pacific Salmon Commission, I would like to thank you for this valuable opportunity to testify. I think we are in complete agreement that the pelagic driftnet issue demands extensive review and responsible action.

My statement to you will be brief and with a simple theme. In the Pacific Northwest, Indian and non-Indian fishermen have paid the devastating price of wasteful ill-understood, and inadequately regulated fishery practices. We understand, perhaps better than any other group, that fishermen will devise ways to take salmon before they become available to inshore or inriver fishermen; fisheries will quickly leapfrog progressively along the entire migratory path of the salmon. We have learned painfully that intercepting jurisdictions will do their all to catch a free ride on the hard-won conservation and enhancement efforts of producing jurisdictions. The problem, of course, has been that salmon were treated as a common property resource. As Dr. Crutchfield wrote: "the fishery has tended everywhere to degenerate into a frantic struggle to take fish before competitors can reach them. The results have been catastrophic in both economic and biological terms."

In the Pacific Northwest, Alaska, and British Columbia, we have taken, at long last, the steps needed to regulate the commons for the benefit of the resource and all who depend on it. I would point to the Fish and Wildlife Program of the Northwest Power Planning Council, the Salmon and Steelhead Conservation and Enhancement Act, and the unprecedented and ambitious negotiations underway to settle Indian-Non-Indian harvest allocation issues. I refer also, of course, to the United States-Canada Pacific Salmon Treaty, signed earlier this year. As between the United States and Canada, at least, we are putting our house in order. This hearing will in part reveal whether the United States is prepared to take those steps needed to bring order to the North Pacific fisheries as a whole. I urge you to do so; to use every means available under international and domestic law.

My concern as representative of the Columbia River Tribes is this: High seas driftnetting, particularly the Japanese land based driftnet fleet, apparently intercepts significant numbers of Pacific Northwest steelhead. The Columbia River is the major producer of steelhead. For this and most pelagic driftnet fisheries, unfortunately, existing information is inadequate to accurately assess their impacts on steelhead.

My concern as a member of the Pacific Salmon Commission is that the pelagic driftnet fisheries are in a position to appropriate to themselves a potentially significant portion of the stocks rebuilt or enhanced through the Pacific Salmon Treaty. As this committee is well aware, the treaty sets specific caps on Alaskan and Canadian chinook troll fisheries in order to rebuild by 1998 the naturally spawning chinook stocks of southeast Alaska, British Columbia, and the Pacific Northwest. Nonintercepting fisheries are required to passthrough for spawning the savings from the lidded fisheries. The benefits of these conservation steps should accrue to United States and Canadian fishermen.

I would call upon this committee to direct the National Marine Fisheries Service and other relevant domestic and international management entities to initiate or continue the research required to address these concerns. To the extent we may be of assistance in such efforts, the tribes and the U.S. section of the Pacific Salmon Commission are eager to do so.

In addition, we firmly support the State of Alaska in its efforts to cut interceptions of Alaska-origin salmon. Certainly, the available data establishes that Alaskan stocks suffer most seriously from pelagic driftnet fisheries.

I would like to add one final, personal note. Though my perspective on the pelagic driftnet fisheries is fundamentally that of a fishery manager, I cannot overlook the appalling, indiscriminate violence those high seas fisheries inflict on marine mammals and sea birds. The killing and waste is unconscionable; it must be curtailed.

Mr. Chairman, thank you for this opportunity to testify. I will be pleased to answer any questions you or other members may have.

Senator STEVENS. Let me ask all of you the same question. That is, would any of you disagree with the recommendations of the North Pacific Regional Council, or at least the indicated position of that council, that they intend to recommend, that allocations for bottom fish be denied to vessels from nations which have not complied with fishing practices that are required to preserve the salmon on the high seas?

Mr. WAPATO. Yes, from our perspective we would support that, and I think just from your witness list here today, and there are many more behind us at home, you will find that you have an uncommon coalition, an uncommon support group coming together on this particular issue for some sort of action to be taken.

Senator STEVENS. Good.

Mr. Morgan.

Mr. MORGAN. I strongly support that position, Mr. Chairman.

Senator STEVENS. Mr. Goodman.

Mr. GOODMAN. We would support that position as well. As I said, whatever it takes to end this take of our salmon we would support.

Senator STEVENS. Well, I think that is important that we have an agreement between all of the areas involved in the North Pacific Regional Councils area, that we have a unified position going into that. I think that is very important.

Let me thank you again. We are going to finish up this hearing. I do not have any further questions. My colleagues may submit them to you. They are being called off.

We do appreciate your coming here and waiting so long to testify.

Thank you very much.

Our last witnesses today are Alan Reichman, Greenpeace Northwest, and Mr. Warren King, the International Council for Bird Preservation.

Mr. Reichman, you are first on my list, or however you want to present your statements is all right with me.

STATEMENTS OF WARREN KING, THE INTERNATIONAL COUNCIL FOR BIRD PRESERVATION AND CENTER FOR ENVIRONMENTAL EDUCATION; AND ALAN REICHMAN, DRIFTNETS CAMPAIGN COORDINATOR, GREENPEACE NORTHWEST

Mr. KING. Mr. Chairman, if it is all right, since my interests are more narrowly focused, I think I will begin, and the more general statement will follow.

Senator STEVENS. All right, that is fine. Very good.

Mr. KING. Mr. Chairman, thank you very much for the opportunity to appear before you today.

My name is Warren King, and I am here on behalf of the International Council for Bird Preservation and the Center for Environmental Education.

I would like to address specifically the problem of seabird catch in driftnets. That catch has been quantified in one certain instance, namely, in the Japanese mothership fishery. There is a body of 4 years of data which the U.S. Fish and Wildlife Service has now compiled. The report on the statistics is still in draft, and the entire body of information is not yet available. We do have some hint of the nature of the catch.

The Fish and Wildlife Service report indicates an average catch over the 4-year period that they have been making their observations of 163,000 birds caught in the nets, with a range of 100,000 up to 250,000. It is important to bear in mind, though, that this estimate is probably an underestimate, and the Fish and Wildlife Service report makes that point. The reason that it is probably an underestimate is that a number of birds float free. In an earlier study it was suggested that up to 13 percent of the birds floated free from the nets before they were hauled. In addition, the Japanese fishermen apparently release birds that are still alive when they come aboard, and it is unknown how many of those survive. And a third reason that it is probably an underestimate is that the research effort was not concentrated in the high catch areas used by the fishery.

Now, as has been said here today, this is just one of several fisheries in the North Pacific, and our concern focuses now on the other fisheries because we have virtually no information on the impact of those fisheries on the seabird resource.

I would like to mention the land-based fishery, which is about the same size as the mothership fishery, and we can assume catches about the same number of birds. We do not know that for a fact. It is an assumption. We have no data.

More important is the squid fishery. The squid fishery lies to the south of the mothership fishery. It is a larger fishery, about three times as large as the mothership fishery, and the first information we have had on the impact of that was given today in testimony of Mr. Gordon of National Marine Fisheries Service. He indicated in a very brief sample conducted by the Coast Guard vessel that 27 birds were found in 53 miles of nets. I put my pencil to work and came up with a total of 509,000 birds over the course of the million or so miles of nets that the fishery employs in the course of a year.

This needs to have added to it the Taiwanese squid fishery and the Korean squid fishery. So that is a significant additional number of birds that are killed each year in the nets.

It should be pointed out that the species of birds represented in these nets of the squid fishery are somewhat different than those in the mothership fishery. The areas further south, south, in fact, of many of the temperate waters, and getting into tropical waters, and so the shearwaters, which comprise about half of the mothership fishery kill are absent from that area. They move through on migration in large numbers, but during the time when this mini-sample of 27 birds in 53 miles of nets was accumulated, there were no shearwaters in the area. There were some relatives of those shearwaters, one of which is the Hawaiian dark rumped petrel, which is known to feed in the area occupied by the squid fishery. The Hawaiian dark rumped petrel is an endangered bird that occurs only in the Hawaiian Islands. That is a concern that has not been expressed in any of the publications that I am aware of.

In addition to the squid fishery, there is the Japanese billfish fishery which currently employs about 395 boats, plus an unknown number owned by the Taiwanese. We do not know how many birds they are catching. We can assume that it is a substantial amount since Japan is employing more boats for this fishery than they are presently for the mothership fishery.

All of this totals to an unknown sum, probably on the order of a million or more birds caught in nets intentionally employed each year. We have no way of estimating the catch of ghostnets drifting aimlessly in the North Pacific. h

There has been some research done on ways of mitigating this catch, particularly with changing the mesh size. It appears, however, that the seabirds get caught best in the mesh sizes that salmon get caught best. So we are not optimistic that any further research along those lines is going to be very helpful.

I would like to point out that the United States-Japan Migratory Bird Treaty has been in existence for more than a decade now. That treaty specifically identifies all of the seabirds being caught in this fishery, in these fisheries, as being protected by the United States and Japan. There are problems with the fact that the fisheries operate outside the territorial waters of the U.S. Government, and so there may be difficulties in applying specifically the Migratory Bird Treaty to this particular issue. However, the intent of both governments was clear when that treaty was passed, and I would hope that at some time in the near future something might be done to have the notions that were put forward in that treaty carried out.

We recommend the following courses of action. We would like to see a driftnet-free zone established out to 60 nautical miles around the Aleutian Islands to protect breeding seabirds. These are the puffins that were spoken of, in addition to other puffin relatives. The density of seabirds out from the Aleutian Islands, beyond 60 miles, drops off considerably, and a driftnet-free zone out to 60 miles would protect the Alaska-based breeding birds. It should be noted that a great many breeding birds are caught in those nets.

We would like to see the use of existing treaties and the GIFA process to establish a program for monitoring incidental take on all pelagic driftnet fisheries, not just the mother ship fishery. We recognize that considerable money has been expended on the driftnet fishery so far, on research on the incidental take on it, and we would like to see that research extended to the squid fishery, to the billfish fishery.

Most importantly, we would like to see a phaseout of driftnets throughout the Fishery Conservation Zone, and we would like to see the GIFA process used to begin a phaseout of all pelagic driftnets. We believe the practice of using driftnets is uneconomical and destructive of vast numbers of marine resources.

We would also like to see the initiation of establishment of an international convention for comprehensive management of North Pacific marine resources. The shearwaters that were mentioned previously are Australian and New Zealand in origin, and we believe that the Australians and New Zealanders might like to participate in such a convention since birds which are their responsibility are at stake in this fishery.

In short, we would like to emphasize what has been said several times before, that the driftnet fishery is too destructive of marine resources to permit its continued use. We would like to see it phased out in entirety throughout the entire North Pacific.

Thank you very much for the opportunity to speak.

[The statement follows:]

STATEMENT OF WARREN B. KING, ON BEHALF OF THE INTERNATIONAL COUNCIL FOR BIRD PRESERVATION THE CENTER FOR ENVIRONMENTAL EDUCATION

Good morning, Mr. Chairman and members of the Committee. I appreciate the opportunity to testify today on the problem of incidental seabird mortality in pelagic drift net fisheries of the North Pacific. My name is Warren King, and I am here today on behalf of the International Council for Bird Preservation and the Center for Environmental Education.

I will be addressing three aspects of the problem of seabird mortality: 1) what do we know about seabird mortality in pelagic driftnet fisheries in the North Pacific? 2) what can we predict about other fisheries from what we already know? 3) what can, or should, we do about this problem?

While all of the information is not in, there is clearly enough to make some intelligent and crucial decisions. First, I recommend as a minimum the establishment of driftnet-free zones within our FCZ to protect seabirds, and especially breeding birds from U.S. colonies. Second, I propose the establishment of a cooperative research effort between the U.S. and foreign fishing fleets to determine the level of incidental take of seabirds in the drift net fisheries outside our FCZ, and have made some specific recommendations regarding research objectives.

I have made these recommendations for further research because it is obvious that there is a dearth of information on most of these fisheries. Nonetheless, in my opinion, the utility of more field research is questionable. I think it is time for resource managers to face the larger question about how best to manage the multiple resources in the world's waters. Anyone familiar with these and other gillnet fisheries knows that this is an inherently wasteful method of fishing, with the ability to take a massive toll on non-target species of fish, birds, sea turtles and marine mammals. Even after the fishing has stopped, lost and abandoned nets continue to kill and waste marine resources. Perhaps we should ponder whether it is now time to phase out such massive drift net fisheries and to encourage our fisheries and those of other nations to develop alternative methods of fishing that would be more conservative of all marine resources.

To achieve this end, we should consider establishing an international council of the North Pacific fishing nations involved as well as other nations that have a direct interest in the living marine resources affected by these fisheries. Recognizing that the phase-out of drift net fisheries is a long-term goal, we should in the meantime use existing international conventions and the mechanisms available to us under the Fishery Conservation and Management Act to encourage foreign fishing nations to take constructive steps to mitigate the widespread impacts of these fisheries on marine resources.

This said, I will now turn to the specific issue of seabird mortality.

What Do We Know

Our knowledge about incidental seabird mortality in pelagic driftnet fisheries in the North Pacific comes almost solely from research aboard vessels in the Japanese mothership fishery for salmon, which has been operating since 1952. In the late 197 s, U.S. biologists aboard Japanese research vessels concluded that seabird mortality in the mothership fishery was probably much higher than had been previously estimated (Ainley et al 1981). After this finding was revealed, in 1981, pursuant to an agreement between Japan and the National Oceanic and Atmospheric Administration, U.S. observers were placed on board the motherships and catcherboats to collect information on both Dall's porpoises and seabirds caught in fishing nets within the U.S. Fishery Conservation Zone (FCZ). The U.S. Fish and Wildlfe Service (FWS) and the National Marine Fisheries Service (NMFS) collected four years' worth of data from this program. It should be noted that the facts and figures attributed to the FWS in this testimony come from the final report by these agencies, which is still in draft form.

In short, what we learned from this study was that catching salmon with pelagic driftnets, at least in the manner and in the areas in which the mothership fishery operates, results in extraordinary waste of many forms of marine life. Others here today will deal with the similar problems for marine mammals and fish, so I will confine my remarks to seabirds. The FWS has made a conservative estimate that 100,000 to 250,000 seabirds are killed each year in the mothership segment of the salmon fishery alone. The large majority of this kill occurs within our FCZ.

We know also that 21 species are taken in this fishery, but that two species, the short-tailed shearwater (*Puffinus tenuirostris*) and the tufted puffin (*Lunda cirrhata*), make up the bulk of the catch. In some years, short-tailed shearwaters comprised almost half of the total seabird kill. Shearwaters are migratory species that breed in the southern Pacific and migrate through the North Pacific. Shearwater populations in the area are not static. Instead, they move in and out of the fishing area during the summer, so large kills can occur throughout the fishing season, as evidenced by two peaks in shearwater mortality observed in 1982. Since shearwaters feed in groups, and many birds will follow a single bird, hundreds of shearwaters can be killed in a single set.

The mothership fishery takes a staggering percentage of some of the bird populations present in the FCZ. For example, the FWS estimates that 27% of the tufted puffins in the U.S. FCZ are killed in an average year.

Breeding birds from U.S. colonies are definitely being affected by the mothership fishery. We know that near the western Aleutians, where there are large colonies of nesting birds, catch rates increase dramatically as distance to the islands decreases. The FWS has confirmed that catches of breeding birds decline out beyond 60 nautical miles of the islands. Most of the breeding seabirds taken in the fishery are alcids -- puffins or their relatives, which are less mobile species than shearwaters. Data being compiled by the FWS show that for some alcid species a large percentage of those taken were adults, and of those adults, a majority were breeding. Fishing effort in the FCZ is concentrated south of the Aleutians (Uchida 1985). This is the very area in which the FWS determined catch rates to be the highest. Intensive fishing near seabird breeding colonies in the Aleutians could have a serious impact on the U.S. breeding populations of some species.

How confident are we with the information available from the mothership salmon fishery? The estimates of overall seabird mortality in the mothership fishery do not take into account dead birds that dropped out of the net before it was retrieved. As many as 13% of the dead birds can drop out of the net before it is hauled on deck (Ainley et al). Nor do these statistics account for birds that died after being released from the net. Moreover, our data on the mothership fishery come almost exclusively from observations within our FCZ. More than 2,000 nets are set outside the FCZ (pers. comm. Doug Forsell), and total mortality has had to be extrapolated from very limited observations from these areas. What little information we have indicates higher catch rates of seabirds in the fishing area south of the FCZ than north of the FCZ. In sum, seabird kills in the mothership fishery have undoubtedly been underestimated because of all of the unknown factors.

What do we know about the other driftnet fisheries that could be affecting seabirds? Practically nothing, except that in comparison to them, the mothership fishery is relatively small. The mothership fleet now consists of four motherships and 172 associated catcherboats. Each net is 16.5 km long, and annual fishing effort is estimated at 127,000 kilometers of net during a brief, two-month fishing season. The majority of this effort is concentrated in a rather narrow band within the U.S. FCZ.

In contrast, outside our FCZ, the Japanese operate a land-based salmon fishery with 209 vessels, and a comparable fishing effort in terms of length of net set (approximately 124,000 km during the 1983 season). In addition to the salmon fishery, several countries have pelagic fisheries for flying squid. The squid fishery operates in a much vaster area than the mothership fishery, and the season is more than three times as long. In comparison with the mothership fishery, the squid nets are twice as long and there are many more vessels involved.

The Japanese squid fishery alone involves four times as many vessels (511) as the mothership salmon fishery; there are over 200 additional vessels in the squid fisheries operated by Taiwan and the Republic of Korea. It was estimated by the FWS that the Japanese squid fishery alone set almost a million kilometers of net in 1985. The Taiwanese and Japanese squid fisheries set almost 5,000 kilomters of net each night (Eisenbud 1985). In addition there are drift net fisheries for billfish. The Japanese bill fish operation consists of 395 vessels (Uchida 1985). Information on the size of the Taiwanese billfish fishery was unavailable.

What Can We Predict

At this point, it is impossible to make any accurate assesements about seabird kills in any of these other pelagic fisheries. Because there are no observers on these vessels, we are forced to draw shaky conclusions based on limited research in the areas in which these fisheries are operating.

We can make some predictions based on the type of gear used. Research has demonstrated that the mesh size resulting in the highest seabird catch is in the range 106 - 138 mm (Ainley et al 1981). Most of the drift net fisheries use mesh sizes that fall within this range. The land-based salmon fishery has a minimum mesh size of 110 mm, and 115 mm is the most commonly used mesh (Uchida 1985). The squid fishery of Korea uses mesh size of 76-110 mm (Gong 1985). The Taiwanese squid nets have a mesh size of 90-115 mm (Chen 1985). The Japanese squid net have a mesh size of 115-120 mm (Uchida 1985). Therefore the potential of the net material to entrap seabirds is great in these fisheries. The billfish fisheries that use relatively small mesh nets, such as the Taiwanese sailfish fishery with nets of 160 mm mesh, could take considerable numbers of birds. Mesh of this size did entangle seabirds in salmon gillnets (Ainley et al 1981).

The species taken in largest numbers in the mothership fishery also occur where the land-based salmon fishery operates. Limited information on the land-based fishery indicates that the same species -- short-tailed shearwaters and tufted puffins -- dominate in the catch. Catch statistics from research boats suggest that the magnitude of seabird mortality in the land-based fishery is roughly comparable to that of the mothership fishery. However, catch rates of seabirds in commercial nets have been demonstrated to be significantly higher than the catch rates in research nets, which use variable mesh sizes. Thus, it is quite possible that the seabird mortality in the land-based fishery is higher than in the mothership fishery.

We have very limited information on seabird densities in the areas of these pelagic fisheries. During the summer months at least, it appears that seabird densities are lower in these areas than in our FCZ. However, the species most likely to be affected by the fisheries outside our FCZ are shearwaters, which migrate through the fishing area in huge numbers in the spring and fall. The Taiwanese squid fishery begins in mid April (Chen 1985); the peak of both the Taiwanese and Japanese squid fisheries extends from the summer into October, so fishing is going on during the migration seasons. Unfortunately, we have no data on the densities of birds in the fishing area for the fall (or winter) months when the squid fishery is at its peak. If shearwaters fed along the nets during migration, or if a migratory wave coincided with the timing and location of these fisheries, seabird mortality could be very high. FWS biologists suspect that immature birds at least stop on their migration to feed in the fishing area (pers. comm. Doug Forsell). Even if catch rates were lower, because of lower bird density, this would surely be offset by the much greater effort in these fisheries.

Given what little we do know about the size, timing, and location of the pelagic fisheries other than the mothership fishery, we can assume that birds are killed in them in large numbers as well, and that the same species are being taken. What impact are these huge kills likely to be having on seabird populations? Even for the mothership fishery, for which we have relatively good data, this is a question we cannot answer yet.

Our inability to assess the impact of fishing mortality is due, in part, to our lack of knowledge about the important biological parameters of most of the species, such as survivorship, longevity, how old they are when they first breed, etc. We simply don't know what effect the annual removal of thousands of breeding birds will have on seabird populations.

We also don't have a good understanding of the origin of the birds taken in the fishery. For example, although a large percentage of the tufted puffins in the FCZ are killed in the fishery, it is unknown which or how many breeding colonies are represented by these puffins. Such a high percentage of mortality could be significant if a small number of breeding colonies were being affected, although it is certainly possible that these puffins come from multiple colonies, both in the U.S. and in Asia. However, we have no information on the origin of these birds to be able to conclude that such a high annual mortality from fishing is not adversely affecting breeding populations.

Obviously, the impact on seabirds from the mothership fishery cannot be assessed in isolation from the other pelagic fisheries. Moreover, we should take into consideration impacts on these seabirds from sources of mortality other than fishing. For instance, while the world population of short-tailed shearwaters is estimated at 16 million, 300,000 of these birds are taken on their breeding grounds in the southern hemisphere in a commercial harvest for their oil. Their nesting habitat is also subject to destruction and domestic cats kill large numbers. The ability of this population to withstand the additional stress from the fisheries is unknown.

While there is certainly more research that could be done, and while it may be desirable to know more, we will probably never be able reliably to assess the impact of these pelagic fisheries on seabird populations no matter how much time, money, or effort is thrown at the problem. We have almost no historical data on the seabird populations from before the inception of the fishery. In addition, monitoring remote seabird colonies is difficult and expensive at best, our estimates of the breeding populations are necessarily very rough, and it is practically impossible to detect any real trends in the populations.

What Should We Do?

Now that I have just finished discussing how little we know, let me state that there are some situations in which action is required before all the results are in. The mothership salmon fishery at least is such a case. Further research on the salmon fishery in our FCZ would be a waste of time and money. While it may be possible to get more refined information on the size of seabird kills, we already know that many thousands of seabirds are killed in these fisheries every year, and probably have been for the more than thirty years that the salmon fishery has been in operation. We know that large numbers of breeding birds are being taken, and we suspect that U.S. breeding colonies may be adversely affected.

Action should be taken immediately to reduce the potential impact on seabirds from these fisheries by establishing, as a minimum, a zone around the western Aleutian Islands, out to a distance of 60 nautical miles, in which such massive driftnets would be banned. However, while such a step would reduce the taking of breeding birds from U.S. colonies, it would probably have a negligible impact on the taking of migratory short-tailed shearwaters, the primary species being killed in the mothership fishery.

We cannot say as much about the land-based salmon fishery or the squid fishery. I will discuss later my doubts about the utility of further research on incidental take in these fisheries. Nonetheless, I think the political realities are such that a thorough research effort is the best that can be hoped for at this point to conserve the seabird resources affected by these fisheries.

I therefore recommend that U.S. government agencies negotiate agreements with the foreign fishing fleets to develop a cooperative research program that would enable monitoring of seabird kills in the squid and land-based salmon fisheries. If need be, such monitoring should be a requirement for obtaining Governing International Fishing Agreements (GIFAs).

These observers should be responsible only for collecting data on seabirds, not marine mammals as well. The observers should be highly trained in seabird identification, especially because it is much more difficult to determine the species and the age of the birds in the fall and winter -- when the squid fishery is operating -- as the birds are not in breeding plumage. The primary duty of the mothership observers was to collect data on Dall's porpoises, so little information on the ages of the birds could be collected. Because age data are critical for better understanding the impact of the fishing mortality on seabird populations, there should be observers whose sole responsibility is to process the collected birds. Information on the densities of different species in the fishing area is crucial, as is adequate sampling of the fleets to determine variation in densities and catch rates of seabirds throughout the fishing area.

Having laid out these objectives, let me say that I believe it is a mistake to pursue as the critical question the impact of such taking on a species as a whole or on a population. Shouldn't we question whether it is acceptable for hundreds of thousands of birds to be killed every year just because nobody has demonstrated that such a toll is adversely affecting a population. Obviously, we cannot prohibit _any_ incidental taking, but I think a new standard of what is acceptable is sorely needed.

For too long, the burden of proof has rested with the resource managers and the conservationists to demonstrate that an activity is having an adverse impact before that activity can be curbed or stopped. Perhaps the time has come for the burden of proof to be shifted, so that drift net fisheries will not be allowed on such a scale until the _users_ can demonstrate that their activities are not being conducted in a manner that causes excessive harm or waste to our marine resources. Our limited information already suggests that this is not the case with these extensive drift net fisheries.

Finally, seabirds are long-lived species that reproduce slowly. Our ability to measure changes in seabird populations is so limited that if we waited until we could detect a downward trend, it would probably be too late to reverse it. We should have learned this lesson already from our gross overexploitation of other marine species, such as the great whales. Perhaps it is time to take a conservative approach, rather than to wait and end up by having to do too little too late.

Past experience with the high seas salmon fishery indicates that agencies and fisheries are willing to invest energy in the search for gear modifications to reduce incidental take of Dall's porpoises. Unfortunately, it seems that these relatively minor gear modifications will not help reduce incidental mortality of seabirds to a negligible level. The very qualities that make the nets of these fisheries so effective at catching fish are inherent problems for seabirds feeding in the fishing area. Various modifications of the nets to reduce seabird kill may make fishing virtually impossible.

First, studies have confirmed that the birds and the salmon are being caught in the same portion of the net.

Second, it appears impossible to reduce incidental take by varying mesh size. There are obviously practical limits on how variable mesh size can be. Catch rates of seabirds are known to be higher in the mesh sizes preferred for the salmon fishery. Catching salmon and squid would probably be infeasible if the mesh size were increased enough to minimize seabird kills. Likewise, decreasing mesh size to take fewer birds would require reducing the mesh to below the minimum size necessary to conserve the fish resource.

Finally, these fisheries, like many other gillnet fisheries, are incidentally taking marine mammals as well as seabirds, and the solution in one case is not always helpful in the other. For example, acoustical modifications to deter porpoises, which rely largely on echolocation -- even if such modifications could be developed -- would be ineffective for seabirds, which pursue their prey visually. It is conceivable that changing the mesh size to reduce seabird catch might cause greater problems for marine mammals, and vice versa.

A somewhat analogous situation has occurred in California, where protected sea otters and thousands of seabirds were being drowned in nets set for halibut in shallow water. Management officials attempted to reduce the incidental mortality by restricting gillnets to deeper water. Unfortunately, although the seabird kill diminished, alarming numbers of otters continued to be taken in the deeper waters of Monterey Bay in which the fishing had concentrated. Even worse, the shallow water closures could make the situation worse for harbor porpoises. In Morro Bay, shallow waters had been closed to protect sea otters, but it was found that the rate of incidental take of harbor porpoises was highest in the deeper waters of this area (Hanan and Diamond, MS). The incidental take problems of California have been dealt with through one piece of emergency legislation after another, and a real solution has yet to be found.

Without meaning to belittle the intentions behind such gear research or similar attempts to find solutions, I believe that by looking for such solutions in the pelagic drift net fisheries we are ignoring some inherent problems and some larger questions. The problem of incidental take will persist so long as fisheries continue on this scale and with the same basic type of gear. Pelagic driftnets are designed specifically to break apart when the seastate gets rough, to prevent serious tangling. And although the net sections are marked with various devices, many nets must surely be lost, and others are known to be discarded or abandoned. Of all types of fishing gear, they are considered the most likely to become damaged or be discarded (Uchida 1985). We are now all aware that drift nets such as are used in these fisheries continue to kill myriad forms of marine life long after the intentional fishing has stopped. Extensive testimony on "entanglement" was presented last year during hearings on the reauthorization of the Marine Mammal Protection Act.

While this is not the appropriate forum to elaborate on the suspected impacts of such entanglement on marine wildlife, I would like to reiterate that even if we could keep all unwanted animals out of the nets during fishing, without some major overhaul of the fishing methods we would not really have solved the incidental taking problems for many species. We will have succeeded only in relabelling the problem as "entanglement" in discarded or lost nets. It is still esentially a problem inherent in the structure of the fishery.

What we are faced with is not a new problem. A gillnet fishery off Greenland during the 1960s and '70s was responsible for killing half a million murres (Uria lomvia) annually (Tull et al 1972). Surveys of the murre populations from which these birds were being taken revealed massive declines (King et al 1979). Then, when the devastating impact of the fishery on the fish resources became obvious, the fishery was terminated by an agreement between the United States and Denmark.

It was a sad lesson, but we should have learned something from it. Comprehensive management of marine resources requires that we learn from past experiences, that we use foresight and anticipate where problems are likely to occur, and that we show a willingness to take action when the dangere signals appear, even if ti means making some politically unpopular decisions. Long-term conservation and management goals, not short-term economic considerations, must determine our actions.

Unless some concrete steps are taken by the fishing industry and the resource managers in both the United States and in other nations fishing in the North Pacific, I fear that once again we will see the familiar sequence of the California fishery played out on a much larger scale -- first, a fishery becomes established with few curbs and little prior examination of potential conflicts. Then a resource conflict such as incidental take emerges. And finally, after much acrimony and outcry, and usually long after the warning signs are evident, fishing activities are restricted to mitigate the confict.

The long-term conservation of marine resources in the North Pacific requires that legislators and agencies begin now to seriously reassess these fishing operations and to take significant steps to prevent a replay of this all too familiar scenario.

I therefore recommend that Congress and the agencies pursue the following course of action:

1. Immediately ban drift nets in a zone out to 60 nautical miles from the western Aleutians to protect breeding seabirds.

2. Use existing fisheries legislation and treaties to establish monitoring of incidental take in the drift net fisheries for **which we have no information, especially the squid fisheries and the Japanese land-based salmon fishery.**

   I recommend as appropriate vehicles the International Convention for the High Seas Fisheries of the North Pacific Ocean, and the FCMA, specifically the GIFA process.

3. Begin a phase out of Japanese driftnet fisheries within the U.S. FCZ. Use the GIFA process as quickly as possible to encourage a phase out of other high seas drift net fisheries.

4. Initiate the establishment, for the purposes of comprehensive resource management, of an international convention involving all nations fishing in the North Pacific and others concerned with the conservation of North Pacific marine resources (such as Australia).

I appreciate the opportunity to testify here today, and am looking forward to working with the Committee in the future on this issue.

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Senator STEVENS. Thank you, Mr. King.

Mr. Reichman.

Mr. REICHMAN. Mr. Chairman, thank you for this opportunity to present Greenpeace's views on the pelagic driftnet fisheries. We are grateful especially to you, Senator Stevens, for holding this important hearing in the press of other important business being conducted in the Senate.

My name is Alan Reichman. I am a resident of Seattle, and am the director of Greenpeace International's Driftnets Project. For the record, in addition to the five organizations listed in my written statement, this testimony is also made in behalf of the American Society for the Prevention of Cruelty to Animals, Animal Protection Institute, Connecticut Cetacean Society, Friends of the Earth, the Humane Society of the United States, and the Ikare Wildlife Coalition.

We believe that the driftnet fisheries technology represents an unsound, destructive means to harvest fisheries resources. Greenpeace desires effective and responsible conservation of all marine resources, including fisheries stocks. Curtailing the interception and noncatch mortality of U.S. origin salmon and steelhead by pelagic driftnet vessels would serve as one key step to preserve productive salmon and steelhead stocks that could assure the future vitality of the Alaska and west coast fisheries. Most certainly, we share the concerns of all the fisheries related organizations that have been present here today.

I wish to emphasize, though, that thousands of marine mammals and marine birds are killed incidentally by the driftnet fleets, and that this incidental take, and the associated mortality of marine mammals resulting from discarded and lost fishing gear and marine debris, are the largest causes of marine mammal mortality in the North Pacific today.

I would like to mention that contrary to the assertions of Mr. Hodges, current efforts to protect Dall's porpoises from becoming entangled in the driftnets of the Japanese mothership and land-based salmon fisheries are insufficient and unsuccessful. The probable incidental take rate in excess of the limit set by Japan's Marine Mammal General Permit and possible overestimation of Dall's porpoise population levels may in fact be undercutting conservation efforts for the species.

We must realize that to analyze total impact on the North Pacific population, we are going to have to consider that the land-based salmon vessels likely take an equal or greater number than the mothership fleet, and that Japan conducts a harpoon fishery for approximately 6,000 Dall's porpoises each year off its coast.

In regards to the mothership fishery, the National Marine Fisheries Service Observer Program at this time has weaknesses, and unfortunately, Japan has not successfully demonstrated that it has developed net modifications to reduce its incidental mortality rate.

We must realize that the other monitored Japanese fisheries, such as the groundfish trawl fishery, have in the past deliberately organized measures to manipulate the findings of U.S. fisheries observers. Therefore, the current 3 to 5 percent observer coverage of the salmon fishery motherships and catcher boats has inherent shortcomings.

For Japan's general permit to be renewed for the 1987 fishing season and thereafter, salmon vessels are required to have adopted gear that the Secretary of Commerce determines to offer the most practicable and effective opportunity for reducing porpoise mortality. The upcoming review should be rigorous and should involve an in-depth evaluation, including a new environmental impact statement. This process which will be coming up over the next 2 years, I might add, should be used in combination with efforts of the bilateral talks with Japan to attain a phaseout of mothership and land-based salmon fisheries.

I would like to continue with comments on the squid fleets. The high seas squid and billfish driftnet fleets probably cause the incidental take of a far greater number of marine mammals than the salmon fisheries. The sheer size of the squid fleets, which include 700 or more vessels, and the characteristics of their gear, signal a warning that large-scale dolphin mortality may in fact occur.

There have been many analogies presented today to enable us to envision the extent of this problem. One other way is for us to envision that the longest of the squid driftnets could possibly stretch from this very hearing room all the way out past Dulles International Airport. We have little information on the impact of the squid fleets. But the information we do have causes tremendous concern. In fact, the only available information on the take of the squid vessels previous to the current National Marine Fisheries Service investigation, is contained in a University of Washington Fisheries Research Institute report of the findings of one U.S. observer who spent 1 month on board one Japanese squid vessel in 1981. This observer recorded the incidental catch of 11 common dolphins and 7 northern right whale dolphins during the 11 sets of net that he observed.

That is a ratio of 1.6 dolphins incidentally killed per set. While this information does not provide enough data to draw firm conclusions, if we multiply this figure times the roughly 50,000 to 90,000 sets the squid fleets deploy annually, we derive an approximate mortality of 80,000 to 144,000 dolphins per year.

According to Mr. Gordon's testimony the current investigation has revealed a lot of new information. We will have to scrutinize this new information and conduct further research.

There also have been comments today about the marine debris problem, and certainly in the last 2 years we have acknowledged the scope of this problem for northern fur seals, and other species. I wish to reemphasize these problems and emphasize that approximately 639 miles of driftnets conceivably are left afloat in the North Pacific each fishing season from these fleets. We must also acknowledge the views of many other panelists today that such ghost nets not only pose threats to marine life but to human life in oceangoing vessels. So it is a crucial, crucial problem.

I will now proceed to summarize Greenpeace's recommendations for action to achieve mitigation of the hazards posed by the pelagic driftnets in the North Pacific. First, it is clear that the only way to completely mitigate these threats is to terminate the use of driftnets. The U.S. Government should work for a complete phaseout of pelagic driftnet fisheries, and certainly, through the current bilateral talks with Japan, the phaseout of the high seas salmon fisheries would serve as a first step.

Mr. Chairman, we must realize that it is simply not necessary to fish for salmon on the high seas as they return to rivers of origin.

Then, equal attention should be directed to begin to achieve phaseouts of the squid and billfish fleets. In line with this, Greenpeace urges the U.S. delegation to the Unied States-Japan bilateral talks to press actively for a phaseout. It is going to take a lot of courage, but we have the fishing industry and other marine resources at stake, and this is our opportunity. During the process of the bilateral negotiations, we believe that the incidental mortality of nontarget species, including marine birds as well as marine mammals, should be taken into consideration and be open for discussion.

In line with many of the other panelists, we believe that the U.S. Government should be willing to use provisions of the Magnuson Act and the Pelly amendment to the Fishermen's Protective Act to back up these efforts.

Senator Stevens, Greenpeace certainly supports the language of your bill, S. 1245, which acknowledges these crucial problems. Perhaps the language could even be strengthened to acknowledge that a phaseout plan would be the best way to achieve remedial action.

Second, the Government should also act to revitalize the International North Pacific Fisheries Commission so that in the future it may serve a management role instead of merely a forum for the exchange of scientific information.

Also, a new North Pacific Marine Resources Convention such as that discussed by Mr. King could be established to encompass or complement the present function of the International North Pacific Fisheries Commission. Certainly more Pacific rim nations should be included in these conventions.

Last, as the driftnets technology is an unsound, infeasible fisheries technique, the United States should apply the understanding gained from the North Pacific crisis that we are considering at this hearing to our leadership role within the ocean conservation of other regions. Our Government should work for prohibitions of driftnets in oceans where they are not currently utilized, through the Food and Agricultural Organizations of the United Nations and all other competent international bodies.

We must consider that during an era when a rising conservation ethic is sharply reducing the commercial directed kills of marine mammals, and the end of commercial whaling appears to be on the horizon, thousands of marine mammals are being killed incidentally by the high seas driftnets and associated debris. Terminating the use of driftnets in the North Pacific Ocean will not only achieve protection for marine mammals, marine birds, and sea turtles, but will also serve as a crucial tangible step to protect long-term viability of salmon and other fish species.

Mr. Chairman, thank you for this opportunity to express these concerns.

[The statement follows:]

STATEMENT OF ALAN REICHMAN, DRIFTNETS CAMPAIGN COORDINATOR, GREENPEACE

Mr. Chairman, members of the Committee, thank you for inviting me to present Greenpeace's observations on the impacts of the high seas driftnet fisheries of the North Pacific Ocean, and our ideas to mitigate the hazards they pose to marine life. Greenpeace is particularly grateful to you, Senator Stevens, for holding this important hearing. My name is Alan Reichman. I am a resident of Seattle, and the director of Greenpeace International's driftnets project. Greenpeace is an international environmental organization with 550,000 supporters in the United States and offices in fifteen countries. This statement is also made in behalf of Defenders of Wildlife, the Fund for Animals, International Fund for Animal Welfare, and Society for Animal Protective Legislation.

As an organization working for the viability of the natural environment, Greenpeace began an international campaign twenty months ago to achieve protection for living marine resources from destruction by driftnet fishing. We are concerned that the high seas driftnet fisheries of Japan, Taiwan, and the Republic of Korea pose threats to a wide range of marine species in the North Pacific. The 9 to 20 mile long monofilament plastic gillnets used by these fisheries hinder effective fisheries management and cause severe incidental mortality of marine mammals, sea turtles, and marine birds.

Pelagic driftnets are a highly effective form of gillnet. They entrap any marine creatures that cannot pass through their narrow mesh. The netting is made of finely spun single plastic strands which are strong enough to support the nets up to twenty miles long. These gillnets re not degradable. The nets are designed to be invisible to fish, which are caught as schools swim into the panels. This fishing technique is not capable of limiting the catch to specific, or target, fish species. Therefore, significant unintended mortality of fish, as well as marine mammals and birds, also occurs. Quite simply, use of high seas driftnets does not constitute an ecologically sound fishing method.

In the North Pacific, the volume of monofilament driftnet utilized is staggering. It has been calculated that the salmon, squid and billfish driftnet fisheries set 20,500 or more miles of net each day of the fishing season for a total of at least 1,065,000 miles each year.

Greenpeace is calling for a worldwide phase-out of pelagic driftnet fisheries. A phase-out of Japan's North Pacific high seas mothership and land-based salmon driftnet fisheries would serve as an important first step to achieve this goal. Equal attention should also be directed to phase-out the squid and other pelagic driftnet fisheries of Jpan, Taiwan, and the Republic of Korea.

FISHERIES IMPACTS

I would like to establish at the outset that, although Greenpeace is well known for its efforts to protect marine mammals, we desire effective and responsible conservation of all natural resources. It is clear that United States salmon stocks face a variety of impacts which could damage their long-range viability. Curtailing the interception of U.S.-origin salmon by pelagic driftnet vessels would serve as one step to preserve productive salmon fisheries that could assure the future vitality of the West Coast and Alaska salmon fishing industry.

High seas salmon fishing involves the harvesting of mixed stocks from numerous rivers of origin. Salmon stocks can be managed more effectively if they are harvested by inshore fisheries. High seas salmon fisheries diminish the effectiveness of the Fisheries Conservation and Management Act (FCMA) in that the Act provides for "exclusive U.S. fishery jurisdiction over all anadromous species throughout the migratory range of each such species beyond the Fishery Conservation Zone (FCZ)."

Studies by the University of Washington Fisheries Research Institute (FRI) indicate large scale interception of U.S. chinook, coho, sockeye, and chum salmon by the Japanese mothership and landbased high seas salmon fisheries. These studies demonstrate the necessity for remedial action. This interception problem is causing economic hardship to Western Alaskan communities and threatens the long term viability of Alaska's salmon industry.

This salmon interception problem is compounded by the operations of the pelagic squid driftnet fisheries. A recent U.S. Coast Guard report exposed the clandestine take of salmon by Taiwanese squid fishermen. The report illustrates that squid vessels can easily travel into waters at the 47 degree north latitude where there are proper conditions for salmon. While Taiwan has agreed to monitor its squid fleet and direct vessels not to fish in areas where salmon will be found, it is apparent that interception problems will be unavoidable.

To understand the full impact of pelagic driftnets we must also consider that FRI and U.S. National Marine Fisheries Service (NMFS) scientists estimate considerable loss of salmon as a result of "non-catch mortality" in the directed fisheries. R.L. Major of FRI has estimated that one immature salmon is lost for every one taken live, while one adult is lost for every three adults caught. For the Japanese mothership fishery alone, conservative estimates place the non-catch mortality at over 3 million salmon for 1983. Total loss including the landbased fishery and Taiwanese squid fishery could range far beyond that figure. In other words, pelagic driftnet fisheries could be responsible for significant depletion of even target fish resources.

It is also likely that pelagic driftnets are adversely impacting stocks of other fish species. Japanese salmon fisheries appear to be intercepting U.S.-origin steelhead trout. The 1983–84 Biennial Report of the University of Washington School of Fisheries suggests that the majority of steelhead in the central and western North Pacific are of North American origin. They are found in the same areas as a closely related Asian trout species. As a result, it is likely that North American steelhead are being intercepted. It is also suspected that the squid fisheries may harvest steelhead. FRI is currently conducting research to determine distribution and migration of steelhead trout in the range of the high seas salmon fisheries.

Steelhead interceptions would have a detrimental impact on sport fisheries for steelhead in Washington State and Alaska. It would also have hurt Native American commercial fisheries. Representatives of organizations such as the Washington State Charter Boat Association and the Northwest Steelheaders have demonstrated concern over this possibility, and a desire to curtail the driftnet fisheries.

Also, vessels of the high seas squid and billfish fisheries are sometimes found in waters where albacore occur. While no studies are available to assess their take of albacore and impact on stocks, such impact could be considerable and would serve as a roadblock to development of an international program to manage this commercially-important species.

Apart from the hazards caused by the interception and the excessive loss of commercially-valuable fish species, the overall efficiency of the pelagic driftnet technique also poses threats to the long-term viability of fisheries stocks. Thousands of miles of nets fished continuously on a twenty-four hour basis are capable of collapsing even the inestimatable stocks of the North Pacific within the foreseeable future. One early high seas driftnet fishery, the Danish salmon fishery of the western North Atlantic, was terminated in 1976 because of its adverse impact on the long-term viability of Atlantic salmon stocks.

IMPACT ON MARINE MAMMALS

While fish interception and loss are problems of key ecological and economic importance, incidental mortality of other marine species should also be considered an important reason to pursue a phase-out of the utilization of pelagic driftnets.

Thousands of marine mammals are killed incidentally by actively fished pelagic driftnets each year. This incidental take—and the associated mortality of marine mammals resulting from discarded and lost fishing gear and marine debris—are the largest causes of marine mammals mortality in the North Pacific today.

The mortality of Dall's porpoises, other marine mammals, sea turtles and marine birds, as well as the generation of marine debris by the high seas salmon fisheries, has not been discussed at the U.S.-Japan bilateral talks concerning the high seas salmon fisheries. It is also apparent that the International North Pacific Fisheries Commission (INPFC) is not satisfactorily curtailing these impacts. The citizens of the U.S. have a deep concern for the protection of marine mammals. This is made evident by legislation such as the Marine Mammals Protection Act of 1972 (MMPA) and the Packwood-Magnuson Amendment to the Fishery Conservation and Management Act (FCMA). Efforts to mitigate the impacts of driftnets should take marine mammal, sea turtle, and marine bird mortality into consideration, and should pursue the protection of such species through bitlateral talks, the INPFC and other conventions and forums.

According to the National Marine Fisheries Service (NMFS), the Japanese mothership fishery alone catches six species of marine mammals: Dall's porpoises, northern fur seals, habor porpoise, Pacific white-sided dolphins, orcas, and Steller sea lions. The four motherships and their 172 catcher boats, which deploy nine mile long nets, kill at least 5,500 Dall's porpoise, 400-1,000 northern fur seals and smaller numbers of the other four species each year. The Japanese landbased fishery is estimated to be responsible each year for an equal or greater additional marine mammal mortality.

Marine mammals encounter the nets as they swim into the long plastic barricades set in the oecan. The animals are also attracted to the nets because of concentrations of entrapped fish. These nets are difficult or impossible for the animals to perceive. For pinnipeds such as the northern fur seal it is difficult to see the monofilament strands. For small cetaceans, such as porpoises and dolphins, the netting is acoustically "invisible" to their sonar echolocation. The nets kill primarily by trapping the animals beneath the surface so they are unable to breathe, they drown. If they are able to surface and breathe, they will exhaust themselves by struggling, lacerate themselves, and possibly starve.

Problems with mitigation of Dall's porpoise mortality

Current efforts to protect Dall's porpoises from becoming entangled in the driftnets of the salmon fisheries are insufficient and unsuccessful. A probable incidental take rate in excess of the limit set by the General Permit, and possible overestimation of Dall's porpoise population levels, may be undercutting conservation efforts for the species. Also, the NMFS observer program to monitor Dall's porpoise take has weaknesses, and neither Japan nor NMFS has successfully developed net modifications to reduce the mortality rate.

In the 1981 application to the Department of Commerce for an incidental take permit for marine mammals, the Federation of Japan Salmon Fisheries Cooperative Association stated: ". . . in light of the passive nature of the fishing gear and because accidental entanglement of porpoises in the nets is probably attributable to their activeness and agility, incidental taking of porpoises cannot be predicted in advance and is unavoidable with present fishing operations."

Since that application was granted, net modifications have failed to diminish the annual kill. The Japanese Far Seas Fisheries Laboratory and the U.S. National Marine Mammal Laboratory have tested a variety of gear modifications including inexpensive noise generators to scare off marine mammals; sonar reflectors attached to nets; and hollow air tubes woven into the nets for improved sonar detection. Japan has not demonstrated any gear modification that effectively reduced the incidental take of Dall's porpoises. One researcher under contract to perform U.S. modification work recently received a sample net from Japan six months behind schedule and has not yet tested it.

The monitoring program established in 1981 under the General Permit and the Memorandum of Understanding between the U.S. and Japan has inherent shortcomings. Only 5–7% of the motherships and catcher boats have observer coverage. On a statistical basis, this coverage may be too low to allow derivation of an unbiased estimate of Dall's porpoise by-catch. We must note that other monitored Japanese fisheries such as the groundfish trawl fishery have deliberately organized measures to manipulate the findings of U.S. fisheries observers. Tactics have included fishing in abnormal areas when observers were present and operating gear inefficiently in order to lower catches of fish and prohibited species. We must not discount the possibility that similar practices may impede the Dall's porpoise research program so that low take estimates are produced.

In addition, U.S. research to determine incidental take rates has been frustrated, largely by the lack of quality information from Japan. NMFS researchers have found significant differences between estimates of incidential catch from U.S. observer records and estimates reported by Japanese fishermen. For example in 1980–1983, the Japanese motherships reported incidential catches of 1,000–3,189 Dall's porpoise per year while observer estimates ranged from 2,863 to 8,970 for the same years.

The stocks of Dall's porpoises may also be overestimated, contributing to the uncertainty of the status of the species. NMFS' recent best estimate (in L.L. Jones' 1984 report) of a Dall's porpoise population of 950,000–1,900,000 may be high because much data was provided by Japan. Also, the swift-swimming black and white porpoises are a species known to be attracted to the vessels for bow riding, and population extrapolations based on such aggregations would yield exaggerated figures.

The Japanese land-based salmon fisheries exacerbate the impact on Dall's porpoises by taking an equal or greater number than the mothership fleet. Again, there have been disparities between the NMFS catch estimates and those of the Japan Fisheries Agency. The Agency reported a kill of 1,644 porposes in 1982 while NMFS estimated 6,099, based on knowledge of incidential take trends and amount of fishing effort. Finally, the deliberate killing of approximately 6,000 Dall's porpoises annually by the harpoon fishery off the Japanese coast must be considered when calculating the status of the species. Cumulative mortality resulting from all these factors is clearly capable of signficant long-term damage to the health of the Dall's porpoise population.

In December of 1982, President Reagan signed into law an amendment to the North Pacific Fisheries Act which extended the General Permit until the end of the 1986 fishing season. For the permit to be renewed, however, the salmon vessels are required to have adopted gear that the Secretary of Commerce determines to "offer the most practicable and effective opportunity for reducing porpoise mortality." The upcoming permit renewal process will provide an opportunity to end the mortality. As I will further explain in the solutions portion of this testimony, review of the permit should be rigorous and the process should be utilized to attain a phase-out of the high seas salmon driftnet fisheries.

Potential problems associated with the squid driftnet fisheries

The high seas squid dreftnet fleets—which began operating in the late 1970's—probably cause the incidential deaths of a far greater number of marine mammals than even the salmon fleets. However, the squid fisheries are not regulated by any international fisheries convention or management regime. As a result, there is no monitoring program to gain data to estimate the numbers taken of various species. Similarly, the billfish driftnet fleets are subject to no regulation or monitoring.

The sheer size of the squid fleets and the characteristics of their gear signal a warning that a massive incidental mortality of dolphin species may be occuring. The magnitude of Japan's salmon fisheries pale in comparison to the squid fleets. Japan operates 511 squid boats, while Taiwan operates 100-200 and South Korea's fleet totals approximately 100. Information provided by those nations indicates that the monofilament nets used by the squid vessels range from fourteen to twenty miles long. Preliminary reports from personnel conducting the curent NMFS investigation of the squid fleets suggest that some nets could be even longer. The longest of the nets could possibly stretch all the way from the Capitol to Dulles International Airport.

The only available information on the incidental catch of squid vessels was gained in 1981 when Japan National Fisheries Association allowed the U.S. fishing industry to place an observer for approximately one month aboard the "Hokusen Maru No. 1", a squid vessel owned by the Hokusen Gyogyo Company.

The resulting FRI document, "Observations Aboard a Japanese Squid Driftnet Vessel in September-October 1982", reports that the observer monitored 11 sets of the vessel's net and recorded the mortality of 18 dolphins. These included 11 common dolphins and 7 northern right whale dolphins. As identification of dolphin species is difficult, it is possible that some of the speciments could have been Pacific white-sided dolphins.

Let us consider that during these eleven sample sets, a kill ratio of approximately 1.6 dolphins/set was observed. If we multiply this figure times the 50,000 to 90,000 sets the squid fleets deploy annually we derive an approximate mortality of 80,000 to 144,000 dolphins per year. Such a large incidental catch would account for the largest take of this kind in the world, surpassing the incidental take of dolphins as a result of tuna purse seine fishing in the Eastern Tropical Pacific.

While this observer report does not provide a sufficient data base to draw firm conclusions, it does give reason for alarm. It establishes the need for further information-gathering and the urgency to mitigate the impacts of the pelagic squid driftnet fisheries.

Although the impact on large-toothed whales—such as sperm whales, whose primary food is squid—is also unknown, it is conceivable that overfishing squid could have a deleterious effect on the long-term health of the North Pacific populations of these cetaceans.

IMPACTS ON MARINE BIRDS AND SEA TURTLES

Pelagic driftnets also cause high mortality of marine birds. Diving seabirds in particular become entangled in the top few meters of the panels. Murres and puffins of both U.S. and Soviet origin, as well as shearwater and auklets are drowned. The Environmental Impact Statement on the Japanese mothership salmon fishery and observer data have established that the fleet is responsibile for an incidental kill of 250,000 to 750,000 marine birds per year.

Many of the nets of the mothership salmon fishery are set near these species' nesting colonies on the Aleutian Islands. The population levels may be diminished since the seabirds' peak reproductive season occurs in June and July, during the period of the fishery. No information is currently available to determine the impact of the squid and billfish fleets on marine birds.

Driftnets also impact sea turtles. G.H. Balazs' 1984 report indicates that sea turtles have become entangled in monofilament gillnet. Given the wide range of the squid and billfish fleets, it is likely that those fisheries have adverse impacts on sea turtle species.

THE MARINE DEBRIS PROBLEM

Attention has been drawn recently to the striking problems associated with entanglement and ingestion of marine debris. While diverse sources—including trawl fleets and merchant vessels--have contributed to this situation, it is apparent that the pelagic driftnet fleets are a major factor.

Richard Roe of NMFS has estimated that the salmon driftnet vessels lose an average of 0.06% per set of the net they set. Of the approximately 1,065,500 miles of net set by driftnet fleets annually, therefore, it is conceivable that approximately 639 miles are left to float in the North Pacific. Such "ghost nets" are capable of continuing to catch fish, marine mammals and seabirds for an indefinite length of time.

Lost and abandoned driftnet also poses a threat to human life. The propellers and shafts of fishing and other vessels become entangled in the non-biodegradable nets. A report by Craig Hammond of NMFS, "Derelict Gillnet Reported to NMFS. Alaska Region in 1983", describes how the fishing vessel "Westward Wind" was disabled when its propellers and shafts became entangled in a 3 to 5 mile long driftnet fragment.

A phase-out of driftnet fisheries would serve to end at least one source of debris. It was acknowledged at the Honolulu "Workshop on the Fate and Impact of Marine", sponsored by NMFS and other parties last year, that the marine debris problem must be mitigated in association with incidental take problems resulting from directly fished nets.

SOLUTIONS AND ACTION

Pelagic driftnets phaseout

Due to the nature of the pelagic driftnet fisheries technique, the only totally effective means to mitigate adverse impacts is to attain phase-outs of the fisheries currently in operation, and to implement a moratorium so that no new fisheries will be developed, capitalized and brought into operation.

Greenpeace applauds the U.S. delegation to the United States/Japan bilateral salmon talks for introducting the concept of a phase-out of the high seas salmon driftnet fisheries at the recent session in Seattle. We urge the U.S. negotiating team to maintain a strong position and to press actively for a three-year phase-out during future sessions. It will take courage and perserverance to continue to work for a phase-out.

It is completely unnecessary for Japan or any nation to fish for salmon on the high seas. Salmon are anadromous species that return to rivers of origin. The United States and Canada successfully harvest North American origin salmon through inshore fisheries. Japan is capable of harvesting Japanese and other Asiatic origin salmon without fishing for salmon on the high seas. Since different nations' stocks intermingle on the high seas, pelagic salmon fishing does not allow for effective management of salmon and other fisheries resources.

Greenpeace supports the language of Senator Stevens' S-1245, which mandates the Secretary of State to commence negotiations with the Governments of Canada and Japan to eliminate high seas interception of U.S. origin salmon by the Japanese salmon fisheries. We recommend that the language be revised to acknowledge that the only totally effective means to achieve such elimination is by a phase-out of the high seas salmon fisheries.

The U.S. Government should be prepared and willing to utilize the "basket clause" of the FCMA so that the withholding of Japan's U.S. fish allocations can be linked to remedial measures. Similarly, the Pelly Amendment to the U.S. Fishermen's Protective Act pertaining to fisheries import sanctions can be used to achieve compliance.

While the process of working towards a high seas salmon pelagic driftnet fisheries phase-out is underway, other actions mitigating the hazards of the squid and billfish driftnet fleets must begin. An immediate moratorium on further expansion should be sought through appropriate international channels, and a long term phase-out strategy should be developed.

Prohibition of utilization of pelagic driftnets by U.S. vessels

In order to successfully limit the use of pelagic driftnets by the vessels of other nations, it will be necessary to impose a prohibition on their use by the U.S. fishing industry. Information obtained from the NMFS Southwest Fisheries Center (SWFC) reveals that a small number of U.S. vessels are utilizing gillnets to fish for albacore outside of the 200-mile FCZ.

SWFC does not have complete information as there is no management regime for the albacore fishery. However, the Tuna Research Program has stated to Greenpeace that approximately 3-5 vessels are setting gillnets of unspecified length. These vessels' primary fishery is gillnetting for shark within the FCZ off the coast of California. They have just recently begun gillnetting for albacore during the shark off-season.

While 3 to 5 vessels clearly do not comprise a threat to the marine ecology of that region of the North Pacific Ocean, further expansion of this fishery will create new hazards to effective fisheries management and conservation of non-target species.

This small fleet should cease its albacore fishing operations. No public funds from any source. Including the Kennedy-Saltonstall program, should be allocated to develop such a fishery. These policies should be set directly by NMFS regulations or mandated by the FCMA, if necessary.

The ramifications of development of this fishery are further complicated by the lack of an international management scheme for albacore, which is a migratory species.

Any efforts by the U.S. to limit and to phase out pelagic driftnets outside of territorial waters may well be fruitless if we cannot act to limit our own vessels from using any form of gillnet beyond our 200 miles FCZ.

International North Pacific Fisheries Commission

As the international convention to regulate North Pacific salmon fisheries, the INPFC can possibly serve as a means to gain protective measures. However, in order to serve as the forum needed to manage the pelagic driftnet fisheries and other North Pacific fisheries, INPFC must be revitalized. For example, during recent attempts to resolve the high seas interception problem. INPFC has shown significant weaknesses. When the U.S. Commissioners raised the interception problems at the 1984 annual meeting and called for its termination, no action was taken by the Commission. Action could include amending the Annex applicable to Japan's salmon fishing operations or adopting other measures. The U.S. was compelled to request Japan's participation in bilateral talks outside of INPFC.

Under U.S. leadership, INPFC is capable of remedial action addressing this problem. The U.S. should pursue a vigorous strategy to attain a phase-out of the pelagic salmon fisheries. This work should parallel efforts through the bilateral talks, and the results of those negotiations should be brought into INPFC. To carry out these measures, the U.S. Commissioners should also press for the strengthening of INPFC so it may serve as an effective management agency, and not merely as a platform for exchange of scientific information.

INPFC is further hindered in that it only involves three nations with fisheries in the North Pacific Ocean: the U.S., Canada, and Japan. An effort must be made to expand INPFC to include more nations, particularly the Republic of Korea and Taiwan, so that the squid fisheries may be properly addressed. A new convention should be established.

Prospects for a new North Pacific Fisheries Convention

A new convention could be established to include all nations with fisheries in the North Pacific Ocean. Such a convention would be a scientifically-based management authority concerned with the sustained productivity and ecological health of the North Pacific. It must not languish as a forum for collection of data alone, as have other well-intentioned conventions.

Especially important is the inclusion of the Soviet Union (as well as the Republic of Korea and Taiwan) in such a new convention. The U.S.S.R. harvests large quantities of fish and engages in other activities affecting the total oceanic ecosystem.

At this time, we also recommend commencement of a bilateral program with the Soviet Union to manage the fisheries of the semi-enclosed Bering Sea. As Japan harvests some Soviet-origin salmon during high seas salmon fishing operations, such a dialogue with the U.S.S.R. could assist efforts to phase out the fisheries.

National Marine Fisheries Service Entanglemant Program

This year's at-sea investigation of the high seas squid driftnet fisheries by NMFS and the U.S. Coast Guard is an important first step to gain data on the fleets' operations. This program underscores the importance of solving marine debris and directed take problems in close association. While the $100,000 allocation from the $1 million FY85 Entanglement Program budget for the driftnets project was admirable, this year's work will only serve to provide the foundation for an information base upon which to build a meaningful research project in future years.

Since the oceanic range of the squid driftnet fleets is vast, and neigher Japan, nor Taiwan nor South Korea have agreed to cooperate with the project, a greater financial commitment will be needed in the future to enlarge the program's scope to obtain a greater data base and accurately assess directed take and marine debris impacts. A new program should be developed by NMFS with funding from a separate budget to enlarge the scope of the driftnet research as needed in the coming years.

Dall's porpoise incidental take general permit review process

The upcoming review of Japan's incidental take General Permit, to determine if it will be renewed for the 1987 fishing season and thereafter, provides an opportunity for thorough appraisal of nontarget species mortality and the general practices of this fishery.

Unfortunately, the current permit was extended in late 1982 without a full public review. The upcoming process should involve an in-depth evaluation, including a new Environmental Impact Statement under terms of the National Environmental Policy Act.

Evaluation of Japan's application should take into consideration negotiations with the Japanese Government concerning termination of the mothership and salmon driftnet fisheries. Actions proposed at bilateral talks, or through other forums such as INPOFC, could be particially implemented by the threat of U.S. refusal to renew this marine mammal incidental take permit.

Objetives beyond the North Pacific

While this oversight hearing treats the pelagic driftnet fisheries of the North Pacific Ocean, Greenpeace also views this issue in its global perspective. It is clear that pelagic driftnet fisheries may jeopardize living marine resources in any ocean region they are used.

The United States should apply the understanding gained from the North Pacific situation to our leadership role in ocean conservation of other regions. One step would be for our government to work for prohibitions of driftnets in oceans where they are not currently utilized. An appropriate forum is the Convention for the Conservation of Antarctic Marine Living Resources where a ban on driftnets could be set before this dangerous technology is ever utilized. Such positions should be taken at all appropriate forums including the Food and Agriculture Organization of the United Nations. The United States now has direct experience with the adverse impacts of pelagic driftnets. Providing information about these problems to other nations, and working to cease escalation of this fisheries technology, will serve to protect the global ocean environment.

CONCLUSION

Mr. Chairman, members of the Committee, the pelagic driftnet technique is not a sound fishing method. Effective action must be taken at this critical juncture to protect precious U.S. fisheries resources, marine mammals, sea turtles and marine birds. Interception and non-catch morality of U.S.-origin salmon and other species must be terminated so that sustainable stocks will be available to support a vital Alaska and West Coast fishing industry in the future.

The current bilateral salmon negotiations between the United States and Japan provide a unique opportunity to attain a phase-out of the Japanese high seas mothership and land-based salmon driftnet fisheries. Greenpeace urges the United States Government to continue to pursue a phase-out at these talks, and to act to revitalize the International North Pacific Fisheries Commission so that this convention can play a conservation role in the future.

An effort to mitigate the impacts of the large pelagic squid and billfish driftnet fleets of Japan, Taiwan, and the Republic of Korea must also be pursued. Clearly, to achieve protection of marine species from the driftnet fisheries of other nations, steps will have to be taken to prohibit the use of gillnets by U.S. fishing vessels outside of the U.S. Fishery Conservation Zone.

During an era when a rising conservation ethic has sharply reduced the commerical directed kills of marine mammals, and the end of commericial whaling is on the horizon, thousands of marine mammals are being killed incidentally by pelagic driftnets. Terminating the utilization of pelagic driftnets will achieve protection for marine mammals, sea turtles and marine birds—and serve as a tangible step to protect the long-term viability of salmon and other fish species.

Thank you for this opportunity to express Greenpeace's views.

Senator STEVENS. We appreciate that, Mr. Reichman.

What is the magic of 60 miles, Mr. King?

Mr. KING. That is the distance at which the densities of the birds which are breeding along the Alaskan coast drops off sharply.

Senator STEVENS. All right. I think I understand your position, gentlemen. I do not have any questions.

I agree with you, so we appreciate your presenting the testimony and waiting so long to help us make this record.

Thank you all very much.

[Whereupon, at 1:40 p.m., the committee recessed subject to the call of the Chair.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF HON. BILL SHEFFIELD, GOVERNOR, STATE OF ALASKA

Mr. Chairman, I want to thank you for the opportunity to testify on the issue of high seas pelagic gillnetting. This issue is of vital importance to the conservation and management of our marine resources, but even more importantly, it is vital to the economic and social well-being of Alaskans. The interception of Alaskan salmon on the high seas by the pelagic gillnets of the landbased and mothership fleets of Japan costs the citizens of our state approximately 20 million dollars per year in lost harvest opportunity. This massive economic loss is made even more severe by the fact that it disproportinately falls on the citizens of western Alaska, and particularly the Arctic-Yukon-Kuskokwim region, which is one of the most economically depressed regions in the United States. The average annual individual income of fishermen in the Arctic-Yukon-Kuskokwim is only about $5,000. Additionally, because of their low cash income, citizens of this area are extremely dependent on these salmon resources for subsistence use.

In addition to the conservation/allocation concerns for our salmon fishery, these high seas fisheries are also destructive to other marine resources such as marine birds and marine mammals. The number of these animals destroyed by high seas gillnets, both when fishing and when lost at sea, is staggering.

The legal justification for this foreign fishing is found in the International North Pacific Fisheries Convention (INPFC). The treaty, first signed in 1952, by the United States, Canada, and Japan, established a line at 175° W. longitude in the north Pacific Ocean and Bering Sea as the eastern limit of Japanese fishing. The United States, at that time, thought the line would be an effective division point between stocks of Asian origin and stocks of North American origin. Subsequent research, conducted under the auspices of INPFC, conclusively proved that this was not true, and in fact, massive interceptions of North American, primarily Alaskan, salmon were occurring each year. The INPFC required concurrence of all three national sections to implement any change in the so-called abstention line. Consequently, for 26 years, these interceptions continued over the protest of the United States.

Upon the enactment of the Magnuson Act in 1976, the INPFC, which allowed a foreign fishery on our domestic salmon stocks in our fisheries conservation zone, automatically came into conflict with domestic law. Under the terms of the Magnuson Act, the INPFC had to be renegotiated, and this was done in 1978. From the U.S. perspective, the new protocol was negotiated in order to allow the Japanese to continue its harvest of Asian salmon on the high seas without impacting Alaskan (and Canadian) stocks. The result was the movement of the Japanese fleets westward towards the Asian coast and out of what were known at that time to be the most important interception areas, particularly those areas affecting Bristol Bay sockeye salmon. The Japanese concerns regarding groundfish allocations under the Magnuson Act and pressure by the Soviets to reduce the Japanese salmon quota probably contributed to the success of this renegotiation.

This 1978 renegotiation of the convention moved the abstention line ten degrees farther to the west (an average of 450 miles). The Japanese mothership fishery was allowed to continue fishing in the far western part of our fisheries conservation zone in exchange for concessions made on the high seas outside of the zone. There is no doubt that this movement substantially reduced interceptions of North American salmon, but it did not eliminate them.

While the renegotiation in 1978 was a step in the right direction, it was not intended by the United States, or the State of Alaska, to be the end of the journey toward rational management of Alaska's salmon stocks. That goal was, and continues to be, an end to interception of North American salmon on the high seas. These fish stocks are fully utilized and intensely managed. The State of Alaska, alone, spends over $40 million annually on management and enhancement of its salmon resources. The salmon fishery forms the backbone of our largest industry and is the basic sustenance of life in many of our rural communities.

Alaska has had a long and productive relationship with Japan. Our fisheries resources have supplied Japanese markets, and we believe this relationship is beneficial to both our country and theirs.

However, we cannot accept a situation under which resources managed and nurtured by our citizens are harvested for gain by others without our direct involvement or agreement. The magnitude of the impacts is difficult to assess accurately, due to the mixed stock nature of the fishery, dropout deadloss from gillnets, and resource damage from derelict gear. Enforcement is extremely difficult, and catch reporting accuracy in some of these fisheries is problematic with regards to both species and area of catch. This makes an annual management regime responsive to regional needs unlikely.

While a great deal of research has been done on the continent of origin of salmon in the high seas fishing areas, every new study reveals interception impacts we previously had not imagined. Research conducted since the renegotiation of INPFC in 1978 shows that the Japanese landbased and mothership fisheries still intercept a significant number of Alaskan salmon. Last fall, in Alaska, the publication of a study, funeded jointly by the State and federal government and conducted by the University of Washington caused considerable furor. That study concluded that not only western Alaska chinook were being intercepted, but also chinook from central Alaska, southeast Alaska, and British Columbia. While Japanese scientists may debate the exact level of these interceptions, every new study simply confirms that the interceptions are worse than previously expected. The only answer is to develop a specific stock management plan that ensures that these salmon of North American origin return to Alaskan waters to benefit Alaskans instead of being intercepted by Japanese fishermen on the high seas.

Historically, the Japanese salmon fisheries were coastal and concentrated on Asian salmon. When Japanese fishery operations were forced to leave Soviet soil, they moved offshore. In addition, Japan's own natural salmon runs were depleted by overfishing and habitat destruction, forcing the Japanese industry to look elsewhere for a new source of fish. The logical solution was to move further offshore where the same salmon, often as immatures, could be harvested.

From our viewpoint, any high seas fishery is wasteful and a poor management alternative. However, if Japan and the U.S.S.R. agree on such management of Asian stocks, that is their concern. The Japan-Soviet agreement has moved Japanese fleets further offshore, out of the Soviet zone and even out of major high seas areas outside their zone, causing the Japanese to expand their effort in areas where North American salmon occur, and resulting in our involvement in the issue.

At the same time its Asian fleets were being moved offshore, Japan was working to become a world leader in aquaculture. Japan's hatchery-bred salmon runs are the envy of many nations, with coastal harvests of hatchery salmon now exceeding the total harvests by the high seas salmon fleets. These hatchery returns did not exist when the high seas fleets first put to sea. If maintenance of Japanese high seas fishing fleets is a high priority, as has been claimed, why are they not given access to these hatchery fish? Obviously, the answer is that Japanese coastal fishermen and their cooperatives are no more receptive to high seas interceptions of their managed stocks than are Alaskans to theirs.

This is the situation we face: to catch Asian salmon under an Asian salmon agreement, and under a fee schedule quota system for Asian salmon, the Japanese fleets fish in the U.S. zone, the central Bering Sea, and areas to the east of 160° longitude in the north Pacific. These areas would not be necessary to catch Japan's Asian salmon catch quota, except that Japan has agreed with the U.S.S.R. to stay out of the most logical areas to harvest Asian Salmon.

The time has come to phase out this anachronistic approach to salmon management. Japan claims it is not harvesting Alaskan salmon on purpose, but only to claim its share of Asian salmon based on a historical right to these stocks. Since there is a Japanese fishery in the U.S. zone, but not in the Soviet zone, these arguments have apparently not persuaded the Soviet government. All three countries recognize the legitimate right of the state of origin to manage its anadromous resources, even on the high seas. The time has come to match these legal principles with action.

We are sympathetic to the economic dependence of Japanese high seas salmon fishermen in this fishery created by years of Soviet agreements and under the INPFC. We believe a phased approach to eliminating interceptions is acceptable to give Japan time to seek a more Asian-oriented salmon fishery regime from the Soviets, or the movement of Japan's fleets into alternative fisheries. This process must not, however, be allowed to drag on indefinitely. We believe that there *are* solutions to allow continued harvest of Asian stocks without significant interception of North

American salmon, but they will require considerable change in the present arrangement including movement of Japanese fleets farther to the west.

Towards this end, the United States this year has initiated bilateral discussions with the Government of Japan on ways to reduce or eliminate North American interceptions. To date, the Japanese have not responded with any constructive proposals or actions which they are willing to take to eliminate these interceptions. While further talks are scheduled, continued adamant refusals to recognize our concerns and our legal authority to manage these stocks must be taken into account when considering other cooperative programs with Japan on the harvest and development of the non-salmon fisheries off our coast. As Japan is the largest harvester of groundfish resources from the continental shelf off Alaska, further allocations of these other fisheries to Japan should certainly take into account Japanese cooperation, or the lack of it, on the salmon interception issue. I must emphasize that the high seas interception of Alaskan salmon resources is one of the most aggravating political issues in Alaska. We continue to get communications on almost a daily basis from Alaskan fishermen complaining about high seas interceptions. Progress must be made toward solution of this issue. The economic well-being of many of our residents is at stake.

Thank you for this opportunity to express our views.

STATEMENT OF DR. JEN-CHYUAN LEE, DEPUTY DIRECTOR, FISHERIES DEPARTMENT, COUNCIL OF AGRICULTURE, EXECUTIVE YUAH, TAIPEI, TAIWAN, REPUBLIC OF CHINA

Mr. Chairman, it is an honor to present the views of the Taiwanese fishermen on the important subject of this hearing. As we understand it, the purpose of the oversight hearing is to gather information about the nature and extent of the pelagic driftnet fisheries for salmon, squid, sailfish, marlin, and other species in the North Pacific. The hearing is also to discuss current and proposed cooperative research and development efforts to miligate any adverse impacts that may result from those fisheries.

The Government of the Republic of China recognizes that the fishery resources on the high seas of the North Pacific beyond 200 miles belong to all human beings. Therefore, the resources should be conserved and managed consistent with the freedom of fishing operations in this region. Any treaty or other agreement concerning the North Pacific fisheries should be based upon the principles in the 1982 Convention on the Law of the Sea. In particular, the Government of the Republic of China accepts the provision in Article 66 whereby states in whose rivers anadromous stocks originate shall have the primary interest in and responsibility for such stocks. The Taiwanese are willing to cooperate with the state of origin and to take necessary measures with regard to the conservation and management of such stocks.

The Government of the Republic of China is aware of the difficulties that have arisen from the catching of salmon of North American origin by the squid gill net fishery. We have revised the fishing regulations applicable to our vessels to deal with these difficulties. A copy of English of the new regulations is attached to this statement. As can be seen, the penalties for violating the regulations are quite severe. The regulations are being enforced and already four companies have been punished.

The Government of the Republic of China is also deeply concerned with the accidental catching of marine mammals and sea birds by the gill net fishery. We have encountered these problems elsewhere and have an ongoing cooperative research program with the Government of Australia. The program involves the use of a metal chain attached to the gill net which frightens the marine mammals away. To date, the results of the research have been encouraging.

The Government of the Republic of China emphasizes that any North Pacific high seas fisheries agreement should be based on integrated scientific information contributed by all the participating fishing countries. We strongly recommend that a commission consisting of fisheries scientists be formed from all the nations involved. The commission should evaluate and appraise the current state of the fisheries and formulate a sound basis for the future development of the fisheries in this region. All affected countries should join in cooperative research to gather the data necessary to minimize the harmful effects of the gill net fishery. If this approach is acceptable to the nations concerned, the Government of the Republic of China is prepared to reschedule the cruise plan of a research vessel for this purpose.

Again, we thank you for the opportunity to present our views and look forward to cooperative efforts with the United States of America.

Attachment.

TAIWAN DISTRICT NORTH PACIFIC SQUID FISHING MANAGEMENT REGULATION

This regulation is enacted for the specific purpose of improving the management of squid fishery in the North Pacific to avoid the catching of salmon which may be found in these waters.

(1) No squid fishing vessel shall be allowed to conduct its squid fishing activities within the 200 nautical miles or Exclusive Economic Zone of any country in the region such as: The United States, Canada, U.S.S.R., etc. unless permitted to do so.

(2) Catching or possession of salmon and trout is prohibited. Any salmon or trout which are caught shall be returned back to the sea immediately.

(3) Between 170°E. longitude and 145°W. longitude, the northern boundary for the squid fleet is 40°N. during June, 42°N. during July, 44°N. during August, and 46°N. during September. During October, the boundary drops back to 44°N., to 42°N. during November, and 40°N. during December. East of 145°W. longitude, the squid fleet will not fish with gill net gear for all seasons.

(4) West of 170°E. longitude, the squid fleet will not fish with gill net gear north of 39°N. Only jigging gear may be used north of 39°N.

(5) Prior to departure for the North Pacific fishing ground, the squid fishing vessel shall register itself to the Kaohsiung or Keelung Fishing Vessel United Service Center for each cruise and clearly describe the fishing areas on official forms which shall be kept as a reference by any of the above agencies concerned. After completion of the cruise, each squid fishing vessel shall return to its original home port for inspections uless it has been an emergent case and approved beforehand by its fishing authorities to change the entering port.

(6) No squid fishing vessel is allowed to transport or sell its catch at sea or through any third country by any means to other countries.

(7) The skipper of a squid fishing vessel operating in the North Pacific Ocean, shall daily record its adequate fishing position, fishing gear used (zigging or gill netting), total catch in weight and fish composition for each operation, etc. in their navigational and fishing logbooks. He shall also properly collect the information material of its satellite navigation for the whole cruise. When the vessel is inspected in the home port after completion of the cruise, the logbooks and satellite information paper indicated indicated above shall be handed out for inspection by the fishing port authorities. If any vessel is found to contain an excessive load of salmon aboard, unloading process shall be allowed to operate only after a detailed inspection, made with the local fishery authorities concerned has been completed.

(8) According to the relevant articles of the Fisheries Law and the Fishing Vessel and Crew Management Act, each violation against above articles of this regulation will be examined and executed on penalty of the content prescribed as follows:

(1) If a vessel is found to have violated Article 1 of the regulation, i.e. an intentional intrusion into the 200-mile E.E.Z. of any country, the skipper's certificate shall be suspended for 1 to 2 years. If the intrusion is unintentional and is caused by force majure or failure of navigational aids, the certificate shall also be suspended for a period of less than 6 months.

(2) The skipper's certificate shall be suspended for 1 or 2 years, and the fishing license of the vessel suspended for 6 to 12 months if it retains salmon on board in violation of Article 2 of the regulation.

(3) Any violation of Articles 3 and 4 shall result in the skipper's certificate being suspended for a period of less than 6 months.

(4) Any violation of Article 6 shall result in the skipper's certificate and the fishing license being suspended for 6 to 12 months.

(5) If the skipper fails to submit his relevant logbooks and information material for inspection or makes a false report, his certificate shall be suspended for a period of less than 6 months.

(6) If any violation mentioned above is identified as premeditated and serious or repeated, both the skipper's certificate and the fishing license shall be revoked permanently.

STATEMENT OF THE GOVERNMENT OF JAPAN

The Government of Japan submits its comments to this Public Hearing. Should you have any questions regarding this submission, we would answer them at a later date.

I. OUR BASIC THINKING

Our comments address two subjects: (1) one relating to marine debris; and, (2) the other relating to the incidental takes of marine mammals and seabirds in the course of normal fishing operations. In addition to the above, there is also the subject of incidental catches of salmon of North American origin, but, since this matter is at present the subject of continuous discussions on an informal level between the U.S. and Japanese Governments, we will refrain from commenting on this subject at this time.

First, with respect to marine debris, this category includes not only fishing net from the driftnet, trawl, and other fisheries but also discarded waste from merchant vessels, debris from activities at sea related to sea bed development, and debris originating on shore.

Japan has, for a considerable period of time, demonstrated major concern with respect to the prevention of adverse impact on the marine environment from this sort of marine debris. We have resolutely confronted this subject of marine debris by joining the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Material, ratifying the International Convention for the Prevention of Pollution from Ships, and enacting domestic legislation (i.e., the Law Concerning Prevention of Ocean Contamination and Marine Disasters).

We participated in the Workshop held in November 1984. In the light of the discussions at this meeting, we have sought to develop countermeasures for marine sweeping along the Japanese coast and the expansion of facilities for recycling persistent synthetic debris and of at-sea incineration facilities. We have also been making efforts to raise the consciousness of both Japanese fishermen and the general public in this area.

In addition, through the Northern Pacific Fur Seal Commission, we have been seeking, in cooperation with the other member countries, to develop countermeasures with respect to the entanglement of fur seals.

At the workshop it was indicated that there has been a significant diminution in the amount of plastic debris, including drifting fishering nets washed up on U.S. shores.

The incidental taking on non-target species is an unavoidable part of fishing and it is appropriate to deal with this subject as a part of fishery management. But we believe that, in this event, extreme positions should be avoided, such as a complete negation of fishing activities. Rather, countermeasures should be developed, based on scientific and economic grounds, with the full understanding and concurrence of all parties concerned.

Concerning Japanese salmon driftnet fisheries, we have been seeking to develop orderly operations in our salmon fisheries through INPFC. In addition, in recent years, along with the development of other driftnet fisheries, we have been submitting scientific data on these fisheries to INPFC for consideration by U.S., Canadian and Japanese scientists. (Cf. the attached list of recently submitted material.)

II. COUNTERMEASURES BY TYPE OF FISHERY

1. The salmon fishery

(1) *Incidental take of marine mammals and seabirds.*—With respect to the incidental take of marine mammals by Japan's salmon fisheries, we have been engaged since 1978, in a research program in this area under INPFC auspices. Since the 1981 fishing season, the salmon mothership fishery has been operating in the U.S. F.C.Z. subject to the terms and conditions of a U.S. General Permit limiting the incidental take of marine mammals. We are pleased to state that, the number of marine mammals incidentally taken under the permit has been well far below the stipulated catch limits.

Japan has also been encouraging, principally through our fishing industry, the development of special fishing gear and fishing methods for avoiding incidental take of marine mammals a portion of which has already become operational on our vessels, as provided in the schedule under the permit.

Turning to the incidental take of seabirds, there are reports to the effect that such take amounts to 100,000 to 150,000 birds a year, with more than 60% of this total made up of short-tailed shearwaters. The size of the short-tailed shearwater population is estimated by Australian scientists in Tasmania, the breeding ground for this species, at no less than 16 million birds, and so we do not feel that such incidental take gives significant impact on the population.

Nevertheless, in order to better clarify the situation of the incidental take of these birds, we have been asking our mothership fisheries since 1981 to keep records on their incidental bird takes, by species, and to collect specimens of the birds taken. Experiments have been made during actual fishing operations with experimental gear intended to avoid incidental taking of seabirds, while our research vessels have been involved in an active program of sightings for stock assessment purposes and surveys on the state of incidental taking of seabirds.

We also cooperate on an international level in this area. Although seabirds lie outside the scope of the INPFC, the U.S. and Japan hald (in 1982) bilateral talks on the scientific aspects of this matter.

(2) Lost nets.—The discarding of nets by Japanese fishing vessels is prohibited under the Law Concerning Prevention of Ocean Contamination and Marine Disasters. Thus, vessels are required to incinerate their worn out nets, and even net remnants, either on land or at sea.

In our salmon fishery, at the conclusion of the fishing season, nets no longer needed are sold to recycling dealers or shifted to other fisheries. Net remnants too are sold to such recycling dealers or sent to incinerators. As a result, given the well-established procedures for preventing the discarding of nets, we assume that a problem does not, in practice, exist.

With regard to the incidental loss of nets through drifting, since the fishermen themselves are acutely conscious of the need to avoid the loss of nets to the maximum extent possible, this situation rarely arises. In this connection, we would like to note that, in our mothership fisheries, nets lost through drifting are estimated to account for no more than 0.05% of the total "tants" of nets set. Furthermore, when a net starts to drift away, it soon coils up and becomes cylindrical in shape, so we understand that entanglement rarely takes place in such nets.

2. Squid driftnet fishery and driftnet fishery for marlin and other fish

(1) Prohibited species (salmon).—In the squid driftnet fishery, in order to essentially eliminate the chance of salmon by-catches, fishing areas are delineated each month on the basis of differences in water temperatures between the habitats of flying squid and salmoids. The scientific rationale for these area restrictions has been recognized by scientists at INPFC.

The driftnet fishery for marlin and other fish is directed at warm-water species, such as marlin and albacore, and so operates generally in waters to the south of the squid driftnet fishery. In addition, the nets used in the driftnet fishery for marlin and other fish have a much larger mesh than those used for salmon (net mesh runs 170–180 mm in the marlin fishery, vs. only 60–65 mm in the salmon fishery) and are made of different materials from salmon nets. Thus, there is virtually no likelihood a priori of salmon, a prohibited species, being incidentally caught by the marlin driftnet fishery. Nevertheless, we have been imposing since 1982 area restrictions on this fishery similar to those in effect in the squid driftnet fishery as a means of gaining further protection against the possibility of incidental taking of salmon.

(2) *Incidental take of marine mammals and seabirds.*—With regard to the incidental take of marine mammals, the squid driftnet fishery is presently making a major effort to collect data on the number of incidentally caught mammals by species.

In order to assist in the data collection, the Fisheries Agency of the Government of Japan distributes illustrated posters, for fishermen's use in identifying porpoises by species. At the same time, research is being conducted by government research vessels on incidental taking. This fishery incidentally takes common dolphin, Pacific whitesided dolphin, Northern right whale dolphin and Dall's porpoise.

With respect to seabirds, considering the fact that both the squid driftnet fishery and the driftnet fishery for marlin and other fish are conducted further out at sea than the salmon fishery, incidental take ratios are believed to be considerably lower than those for the salmon fishery. (Incidental takes of seabirds, it may be noted, are generally lower with increasing distance from shore.) Nevertheless, it is noted that we do not yet have a full knowledge of incidental take conditions in these fisheries. Surveys undertaken in these fisheries show the fact that the bird species which comprise the bulk of the incidental takes in these fisheries are different from those encountered by the salmon fishery.

(3) *Lost Nets.*—The prohibition discarding nets naturally applies to these fisheries as well. Nets that are no longer needed are, as in the case of the salmon fishery, sold to recycling processors or incinerated. And, of course, these fisheries have as well been making a determined effort to hold to a minimum the loss of nets through drifting.

It may also be noted that many vessels in the squid driftnet fishery use a system whereby the costs associated with the damage and loss of driftnets are deducted from crew's salaries and wages and so, from this standpoint as well, the crew have every reason to avoid the loss of their nets through drifting.

In these fisheries, as in the case of the salmon driftnet fishery, any nets that happen to drift away will be coiled up and develop a cylintrical shape. Thus, we believe that entanglement rarely develops from this source.

III. FUTURE COUNTERMEASURES

Japan then has been making concerted efforts to manage its driftnet fisheries along the lines described above. However, we believe that the present measures can be even further improved or strengthened through a program of cooperative effort among the various countries concerned.

With particular regard to incidental takes of marine mammals and seabirds by our squid driftnet fishery and driftnet fishery for marlin and other fish, it may be appropriate to intensify research efforts in pursuit of an even better understanding of this subject.

The salmon fishery has a long history as an international fishery and, as pointed out earlier, countermeasures in this area being taken through INPFC. In addition, we should point out that the scope of this fishery itself has, as a result of the continued tightening of restrictions on fishing activities, been reduced to what Japan considers the minimum feasible size for viable operations. As a consequence, we do not believe that this fishery poses any substantial problem in the areas under discussion.

In any case, we feel that, for purposes of solving the matter of entanglement in the marine environment, additional scientific knowledge should be accumulated, through cooperation among the countries concerned, on these driftnet fisheries and rational countermeasures should be established based on sound knowledge. Japan will continue to do its best efforts toward this end.

CALISTA CORP.
Anchorage, AK, September 4, 1985.

Hon. TED STEVENS,
U.S. Senate, Hart Building,
Washington, DC.

DEAR SENATOR STEVENS: In recent weeks, you have probably heard about the unsuccessful fishing season experienced in many parts of Alaska. This year has proved to be an economic disaster for the fishermen in the Yukon-Kuskokwim districts. The salmon did not make their annual migration into the rivers and, consequently, there has been very little successful commercial fishing activity in our region. The fishermen were subject to many emergency openings and closings due to the small numbers of returning salmon.

The people living in the Yukon-Kuskokwim Delta areas are very traditional and extremely dependent on subsistence and commercial fishing. Throughout the summer months, the villagers set aside all activities to intensively participate in these activities. Commercial salmon fishing provides one of the only sources of income for this region. There is no other real source of employment except government, which has many limitations, and is also declining as a source of revenue resulting from cutbacks in state and federal spending. The average fishing income is about $5,500 per year, so any decline in the commercial fishery will have a negative impact on the region and people significantly.

Salmon is also the major source of subsistence food for this area. As insignificant as it may seem when compared to other commercial salmon fisheries, this area has the largest subsistence fishery in the state. Therefore, any changes in the availability of salmon will have a tremendous impact on both the subsistence and cash economy of the people of the Calista region.

This year, the commercial fisheries of the Yukon and Kuskokwim areas have experienced many changes. For the first time in 25 years, the Kuskokwim River was without a commercial chum fishery. The complete closure of all commercial fishing for chum follows recent emergency efforts by the Alaska Department of Fish and Game to eliminate directed king salmon commercial fishing on the Kuskokwim River this year. It appears that the decline in the availability of chum salmon may be a result of the increasing level of interceptions by offshore foreign and domestic drag fleets and the high seas gill net fishery, compounded by a domestic cape interception fishery within Alaska's territorial waters.

Secondly, there is great concern regarding the king salmon fishery since the king salmon are also subject to offshore interceptions. The Alaska Department of Fish and Game has tried to remedy the declining salmon fishery on the Kuskokwim River through closures, gear reductions, and increases in mesh size. To date, none of these measures has been successful in increasing the escapement of king salmon into the Kuskokwim River.

We are appreciative of the past work that has been done to protect and enhance the commercial fishery for Alaskan fishermen. However, we see that there is a special need to provide assistance to the commercial fishermen of western Alaska. In turn, we believe all commercial fishermen will benefit if that assistance provides protection to these local commercial fishing industries. We support those changes to the Magnuson Fisheries Conservation and Management Act (MFCMA) proposed by Representative Johne Binkley and Mr. Harold Sparck of Nunam Kitlutsisti. These amendments and changes in policy would help alleviate the difficulties now being experienced by the Yukon-Kuskokwim and other onshore domestic fisheries which are also being severely impacted by offshore foreign and domestic interception fisheries.

As we have pointed out, the lifestyle of the people in the Yukon-Kuskokwim area is totally dependent upon the success of the harvest of the salmon, both commercially and for subsistence purposes. Calista Corporation and its shareholders would appreciate any assistance that you can provide in helping to maintain the lifestyle and livelihood of the people in the Calista region, as well as protecting the natural and economic resource base of western Alaska.

To further clarify any of our comments, I would be more than happy to speak to you about this problem. I would greatly appreciate it is you would keep me informed as to the current status of this matter.

Sincerely,

NELSON N. ANGAPAK,
President.

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